SERVICE MANUAL SD1030

marantz®

model SD1030

Stereo Cassette Deck

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ Company has created the ultimate in stereo sound. Only original MARANTZ parts can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ stereo are generally available within 72 hours throughout the nation via a toll-free line to our National Parts Depot in California. The sales professionals who take your call immediately refer to their own desk top computer terminal and can quickly determine the availability and price information you require. If, for some reason, your order should exceed our available stock, we usually can instantly provide an alternate replacement part or current delivery information. When the order is placed and confirmed, the computer simultaneously generates "hard copy" orders at the distribution center. As hard copies come directly from the computer to the national parts depot, your requested stock is assembled and prepared for shipment and placed on the first available carrier for delivery to you.

ORDERING PARTS

Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use MARANTZ parts order forms which are available from our National Parts Depot located at the following address:

SUPERSCOPE NATIONAL PARTS DEPARTMENT
20525 Nordhoff Street
Chatsworth, California 91311
Phone: 1-800-423-5108
1-213-998-9333

The following information must be supplied to eliminate delays in processing your order:

1. Complete address.
2. Complete part numbers.
3. Complete description of parts.
4. Model number for which part is required (indicate MARANTZ).
5. Account number (for account customers only).

Direct consumers will be provided with the current retail price quotation on available parts in order to advise them of the cost of the parts and shipping.

OVERSEAS PARTS ORDERING

Parts may also be ordered from the following overseas addresses:

U.S.A.
Marantz Company, Inc.
National Service Dept.
P.O. Box 577
Chatsworth, CA 91311
U.S.A.

CANADA
Superscope Canada, Ltd.
3710 Nashua Drive
Mississauga
Ontario, Canada L4V1M5

AUSTRALIA
Marantz Australia
32 Cross Street
Brookvale, NSW 2100
Australia

JAPAN
Marantz Japan, Inc.
3622 Kamitsuruma
Sagamihara-shi
Kanagawa, Japan

EUROPE

Marantz Europe S.A.
326 Avenue Louise Bte 32
1050 Brussels
Belgium

Marantz France
4 rue Bernard Palissy
92600 Asnieres
France

Marantz Audio U.K., Ltd.
Unit 15/16 Saxon Way
Moor Lane
Harmonsworth
UB70LW
Great Britain

Marantz Germany GMBH
Max-Planck-Strasse 22
6072 Dreieich
West Germany

Marantz Belgium
45 rue Auguste Van Zande
1080 Brussels
Belgium

Marantz Svenska A.B.
Franzengatan 6
10425 Stockholm
Sweden

Marantz Norske A.S.
Refstadalleen 13
Oslo 5
Norway

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

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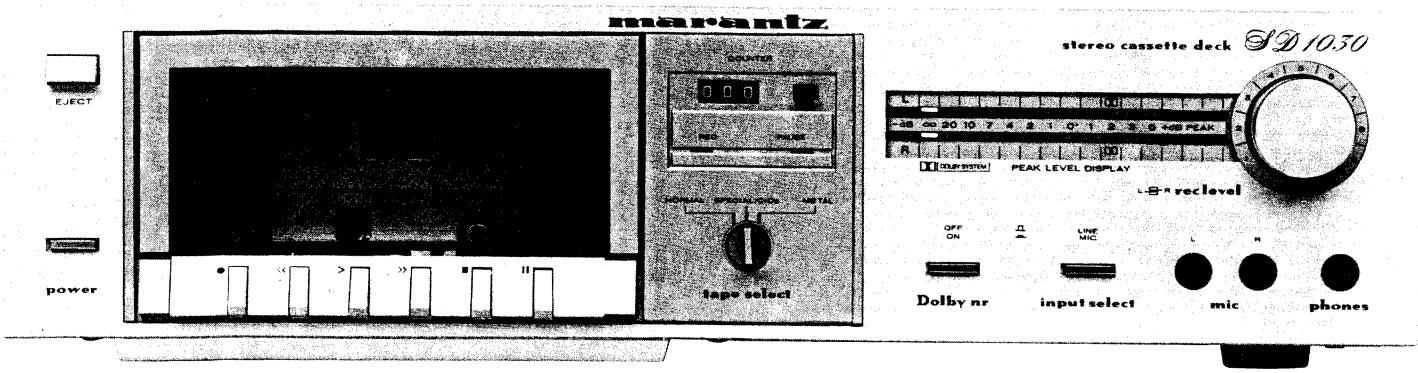
MARANTZ MODEL SD1030 CASSETTE DECK



INTRODUCTION

This service manual are prepared for use by Authorized Warranty Station and contains service information for Marantz Stereo Cassette Deck.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of the operation of the Cassette Deck.

The parts list furnishes information by which replacement parts may be ordered from the Marantz Company. A simple description is included for parts which can be usually obtained through local suppliers.

1. P.W. BOARDS

As can be seen from the circuit diagram, the chassis of your Cassette Deck consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. Main Amp . . . . . mounted on P.W Board PJ01
2. Rec Volume . . . . . mounted on P.W Board PW01
3. MECHA L.E.D . . . . . mounted on P.W Board PY01
4. Power Supply . . . . . mounted on P.W Board P801

2. TEST EQUIPMENT REQUIRED FOR SERVICING

For measuring or checking your Cassette Deck, the following instruments and materials are necessary.

- VTVM
- Audio Oscillator (AF OSC)
- Attenuator (600 Ω)
- Oscilloscope
- Bandpass Filter (1 kHz)
- IEC A-Curve Filter
- Wow and Flutter Meter
- Torque Meter (Cassette Type)
- Digital Frequency Counter
- Distortion Meter
- Blank Tapes (Completely erased with bulk eraser)
  TDK AC-212 (Normal)
  TDK AC-512 (Special/CrO_2)
  TDK AC-711 (Metal)

NOTE: **If any doubt is noted in a measured value, use new tape.**

- Test Tapes (New Tape)

MTT-111	Wow and Flutter, Tape Speed
MTT-112	Measurements of Output Level
MTT-112B	Signal-to-Noise Ratio
MTT-150	Adjustment of Output Level
MTT-216	Frequency Response (for Normal)
MTT-316	Frequency Response (for Special/CrO_2 and Metal)
MTT-121	Cross Talk
MTT-141	Channel Separation
MTT-111	Wow and Flutter, Tape Speed

3. CONFIGURATION AND ELECTRICAL CIRCUIT DESCRIPTION

3.1 SWITCHING FROM RECORDING TO PLABACK AND VICE VERSA

This unit is switched from recording to playback or vice versa by means of a semiconductor switching device. Switching is carried out by applying a DC "high" signal through a switch which is interlocked by a mechanical force. The switching device connected with this route turns ON, causing the following controls to be performed.

Playback

(As long as there is no request for recording, the unit is in the playback mode.)

* Pin 12 of Q006 and pins 12 and 13 of Q005 are "high", so the switches between pins 1 and 2 and 11 and 10 of Q005 which connect the playback equalizer amplifier output to the Dolby amplifier are shorted. At this time, QU01 is ON, so pins 5 and 6 of Q005 which are connected to the collector are "low". As a result, the switches between pins 8 and 9 and pins 4 and 3 of Q005 which connect the mic amplifier to the Dolby amplifier are OFF.

* Pins 1, 3 and 5 of Q006 go "low" and pins 2, 4 and 6 turn "high". QK01 and QK02 are ON and the recording EQ amplifier input is muted. In addition, the diode switching method is used to switch the Dolby output. In the playback mode, the operations of Q006 described above cause DG03 and DG04 to serve as a signal path and apply a reversed bias to DG01 and DG02 so that no signal is allowed to pass through.

Recording

When the S073 switch is ON, the "high" signal specifying the recording mode is output. The switching devices connected to this route perform the following operations.

* Pins 8 and 11 of Q006 are "high", pins 9 and 10 of Q006 are "low", QU02 is ON and QU01 is OFF.
  Pins 5 and 6 of Q005 go "high". Accordingly, the switches between pins 4 and 3 and pins 8 and 9 of Q005 which connect the mic amplifier output to the Dolby amplifier turn ON, shorting the routes.
  In the playback system, on the other hand, pin 13 of Q006 is "high" and pin 12 of Q006 and pins 12 and 13 of Q005 go "low". As a result, the switches between pins 1 and 2 and pins 11 and 10 of Q005 are turned OFF.

* The bases of switching transistors QJ01 and QJ02 go "high", causing the transistors to enter the ON condition. In the playback mode, the head pins on the opposite side are grounded through 10Ω resistors RJ01 and RJ02 and the C to E paths of transistors QJ01 and QJ02.
  In the playback system, on the other hand, the base of QU04 is "high" but its collector is "low".
  Accordingly, the switching devices QU03, QJ03 and QJ04 which are connected to this route are OFF.

* Pins 1, 3 and 5 of Q006 are "high" but pins 2, 4 and 6 are "low". QK01 and QK02 are OFF and the recording EQ amplifier input is no longer in the muted condition. Under this Q006 condition, the Dolby output is switched. That is, DG01 and DG02 now serve as a signal path but a reversed bias is applied to DG03 and DG04 so that no signal is allowed to flow.

3.2 PLAYBACK EQUALIZER CIRCUIT

The playback equalizer amplifier is fixed to 3180 and 120 μsec. by meads of an NF elements. The CR elements is switched by the S102-1 switch and the electronic switching circuits QJ09 and QJ10 to give 70 μsec.

3.3 RECORDING CORRECTION CIRCUIT

In the recording mode, a position that is suitable for the tape is selected by means of the circuits of the tape selector switches S102-3 and S102-4. These switches are used to select recording sensitivity and the intermediate or high frequency correction elements.

3.4 BIAS CURRENT SETTING CIRCUIT

A bias current can be set for each tape by changing the input voltage of the recording bias oscillator which consists of RL06 to RL08. This input voltage can be changed by using the circuit of the tape selector switch S102-2.

3.5 DOLBY NR/MPX FILTER

The Dolby NR is switched by S103, an ON/OFF switch. The MPX filter is normally effective during both the recording and playback modes.

3.6 RECORDING/PLAYBACK MUTING

Transistors for muting are incorporated in the playback system (QG01 and QG02) as well as the recording system (QK01 and QK02). Connected to these transistors are transistors QU05 and QU06 which output a "high" signal for muting and a circuit having a time constant of 1.2 seconds. These muting transistors and time constant circuit result in a muting interval of 1.2 seconds during the rise time in the recording and playback modes. This time constant can be made slightly larger so as to allow for muting during power-on or timer-on.

3.7 SOFT-TOUCH PUSH BUTTON

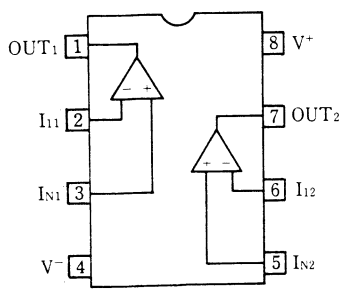
The push buttons used so far are actuated by the mechanical force of a finger in contrast with the push buttons employed in this unit which require finger pressure only to generate mechanical power. The principal source of the mechanical power is the rotational power of a flywheel which allows soft operational commands such as a pressure of 0 to 400 grams on the button or a stroke of 3mm in length to be sensed.

3.8 MECHANICAL SHUT-OFF MECHANISM

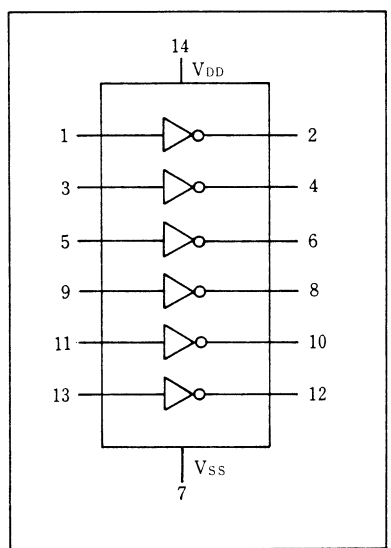
The end of a tape is detected by means of a playback take-up torque. In the PLAY, REC, FF and REW modes, the rotation of the playback take-up torque is halted as the end of the tape is detected. At this time, the lock cam is released by the pin of the TMS tension arm (825N) and the cam of the TMS gear (831N). In this way, an auto shut-off operation is accomplished.

PIN CONNECTION DIAGRAMS OF IC'S USED IN THIS UNIT

Connection Diagram

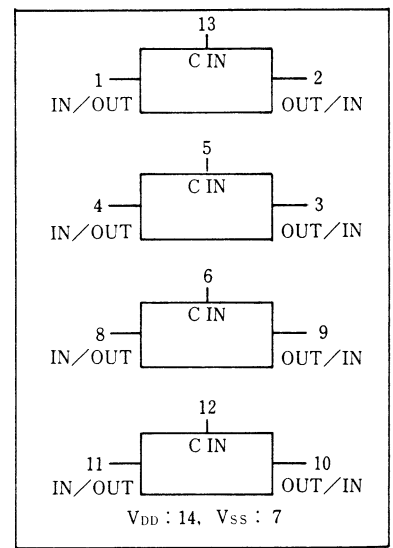


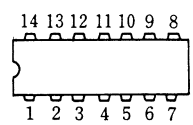
Block Diagram



This IC consists of six inverters.

Block Diagram

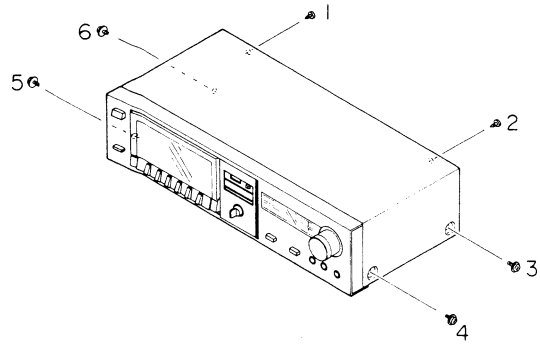




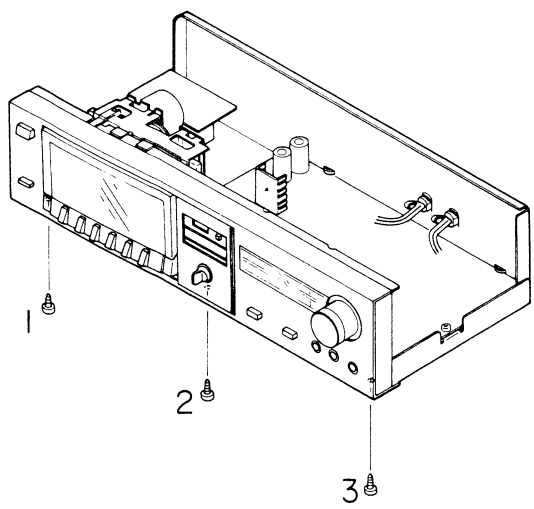
This IC consists of four independent bidirectional switches. When the control input CIN is set to the H level, the impedance between the input and output pins of the switch has a low value. On the other hand, applying an L level signal to CIN will make the value of the impedance high.

4. DISASSEMBLY

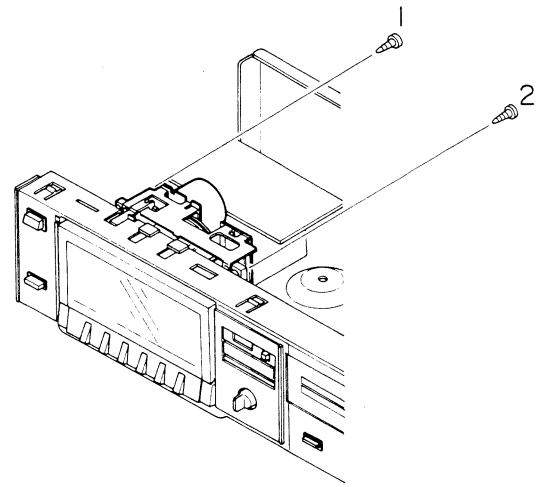
4.1 REMOVING THE TOP COVER
Remove the six screws 1~6.



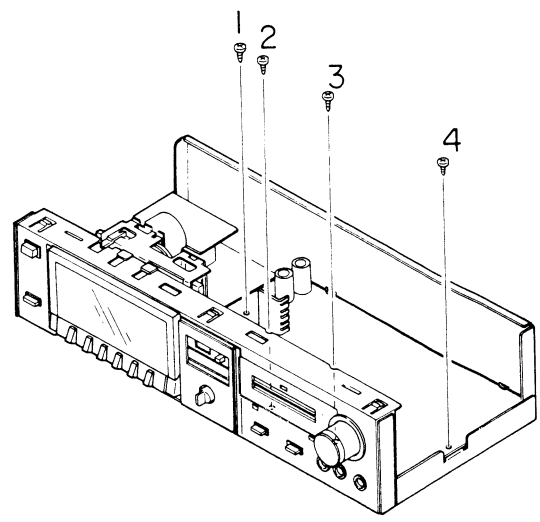
4.2 REMOVING THE FRONT PANEL
Remove the three screws 1~3.



4.3 REMOVING THE MECHANISM
Remove the two screws 1 and 2.



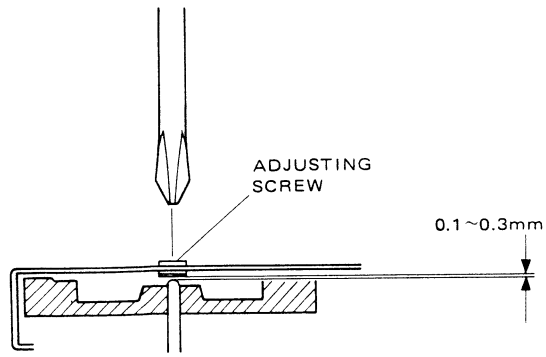
4.4 REMOVING THE MAIN ANP CIRCUIT BOARD (PJ01)
Remove the four screws 1~4.



5. MECHANICAL ADJUSTMENTS

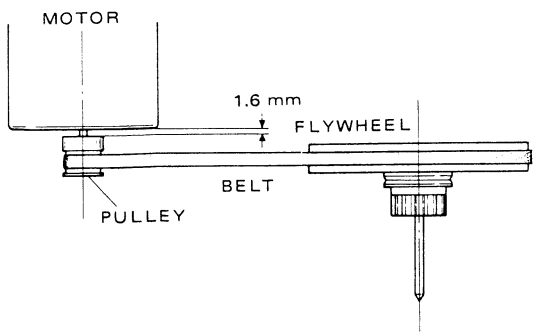
5.1 ADJUSTING THE FLYWHEEL THRUST

Adjust the thrust screw at the flywheel bracket until the clearance between the capstan tail end and the thrust bearing is 0.1 to 0.3 mm, using a philips screw driver. For adjusting, feel for axial dropping of the flywheel for proper clearance as this cannot be seen through.



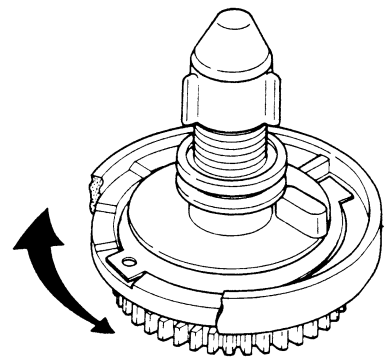
5.2 ADJUSTING THE MOTOR PULLEY

After putting the pulley on the motor shaft, attach the belt from the pulley to the flywheel. After turning the flywheel 2 or 3 times, properly position the pulley so that the belt is put on the center of the flywheel. Make sure the clearance between the pulley and the motor is approx. 1.6 mm.



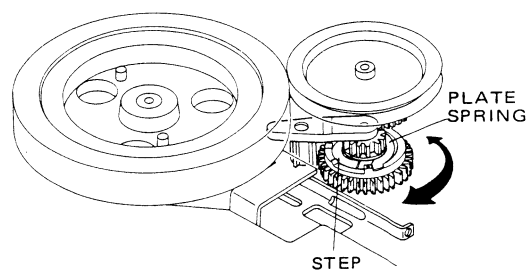
5.3 ADJUSTING THE PLAY TAKE-UP TORQUE

Set the plate spring in proper one of the six steps as shown.
The adjustable torque range is 40 to 65g·cm.
The torque variation ratio is approx. 5g·cm/step.



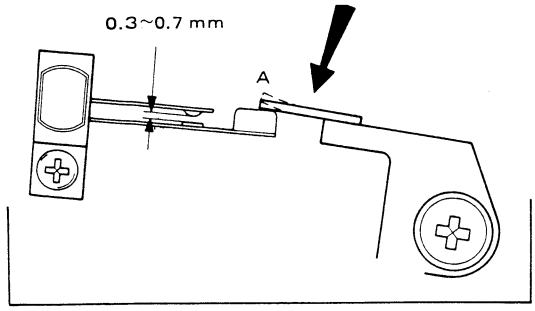
5.4 ADJUSTING THE FF/REW TORQUE

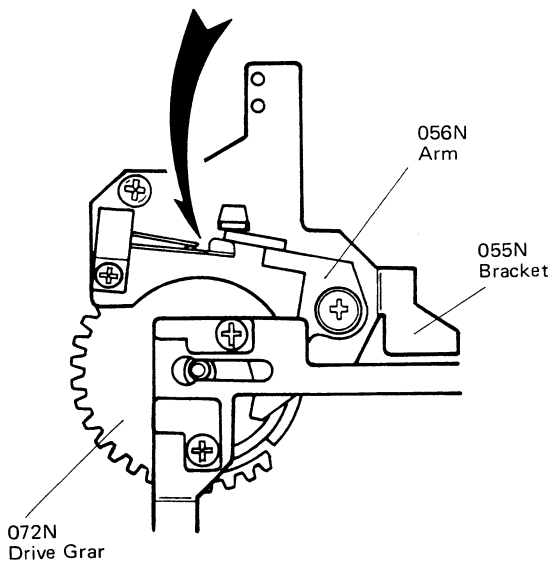
Set the plate spring in proper one of the four steps as shown.
The adjustable torque range is 75 to 120g·cm.
The torque variation ratio is 5 to 10g·cm/stop.



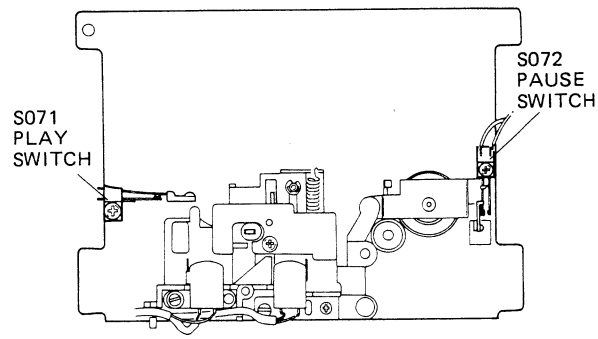
5.5 ADJUSTING THE CONTACT CLEARANCE OF THE STARTER SWITCH

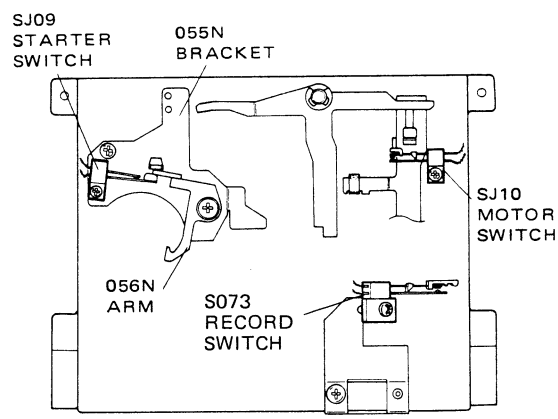
When pushing the starter switch in stop mode of operation, if the motor is not running, adjust the contact clearance of starter switch by bending A portion until the clearance becomes 0.3 to 0.7 mm.





SWITCH LOCATION





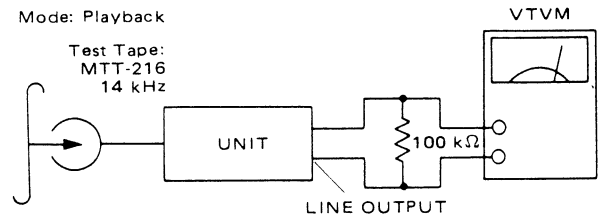
6. ELECTRICAL ADJUSTMENTS

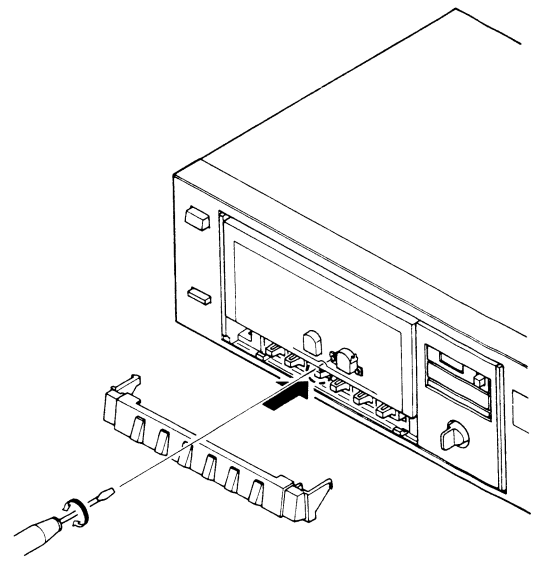
Precautions before Adjustment

1. Before playing the test tape back, thoroughly demagnetize the heads, capstan and similar metal parts using an eraser as the test tape-recorded tone is easily erased.
2. Do not place the test tape on any measuring instrument.
3. Do not put the test tape near a place where the eraser is used.
4. Method of Demagnetization: — Turn the eraser power switch on at a remote position far away from the heads. Bring the eraser close to the heads, capstan and other parts to be demagnetized, and move it up and down four or five times to demagnetize. Slowly separate the eraser far away from the parts, and turn the power switch off.
5. Do not use any magnetized adjusting tool. When using it, demagnetize it from time to time in the course of each adjustment.
6. Do not turn semi-fixed resistor more than needed.
7. Do not apply locking bond excessively.

6.1 HEAD AZIMUTH ADJUSTMENT

1. Remove the cassette door lid and the escutcheon.
2. Set the TAPE SELECT switch to the NORM position.
3. Play the 14 kHz signal of the test tape MTT-216 back. Adjust the head azimuth adjusting screw for maximum VTVM reading.
4. If the peak output reads of the right and left channels are different, set the screws to obtain the mechanical center between the peaks.
5. After adjustment, repeat the playback and stop setting a few times to make certain of no head azimuth deviation. Then, lock the screws with bond.



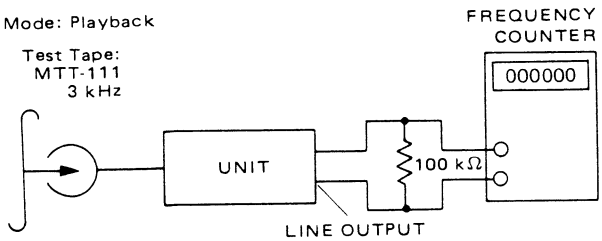


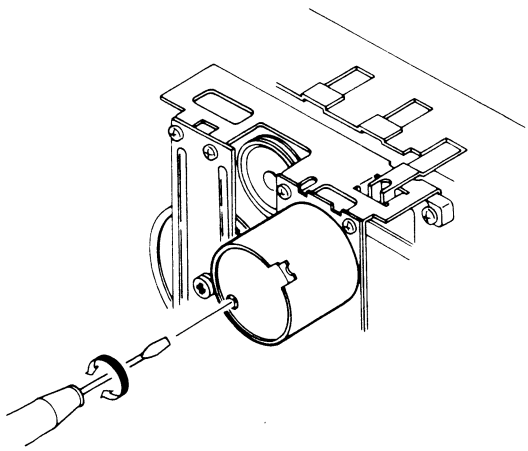
6.2 TAPE SPEED ADJUSTMENT

Play the 3 kHz signal of the test tape MTT-111 back. Adjust the tape speed adjusting resistor inside the motor (M001) for 2990 to 3010 Hz counter indication.

NOTES:

1. **If a strong shock or similar vibration is applied to the deck after adjustment, make certain that the measured tape speed had not changed.**
2. **Be careful that the frequency counter may indicate a wrong value because of too low counter input level.**
3. **Before adjustment, allow for 30 seconds or more after depressing of the PLAY button.**



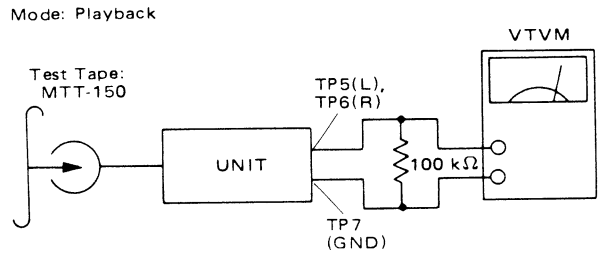


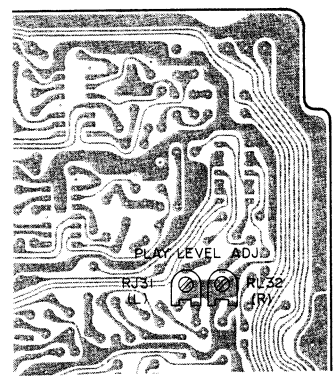
6.3 PLAYBACK OUTPUT LEVEL ADJUSTMENT

1. Set the TAPE SELECT switch to the NORM position.
2. Play the test tape MTT-150 back. Adjust RJ31(L) and RJ32(R) (50 kΩ each) for 580 mV playback output level at the test points TP5(L) and TP7 (GND), or TP6(R) and TP7(GND).

NOTES:

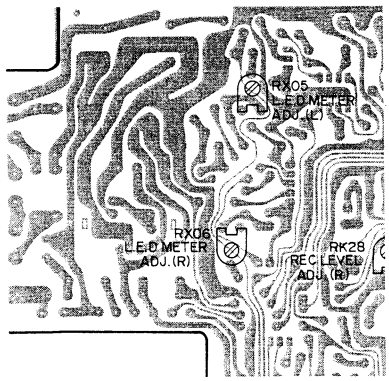
1. **Proceed both for the right and left channels in the same manner.**
2. **This adjustment should be performed after the one for the "Playback Equalizer Adjustment".**





6.4 LED PEAK LEVEL METER ADJUSTMENT

1. Follow the same procedures as in the "Playback Output Level Adjustment" section.
2. Adjust RX05(L) and RX06(R) (50 kΩ each) for 0Ω (+2dB) LED PEAK LEVEL meter reading.

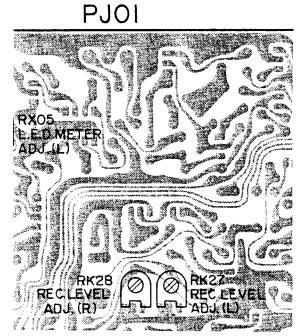


6.5 RECORD-PLAYBACK LEVEL ADJUSTMENT

1. Set the TAPE SELECT button to the NORM position.
2. Connect the 1 kHz, −60 dBV signal to the MIC jack. Set up the deck to the recording state.
3. Adjust the REC Level control for 0 dB LED PEAK LEVEL meter reading.
4. Play the recorder portion back and adjust RK27(L) and RK28(R) for 0 dB LED PEAK LEVEL meter reading.

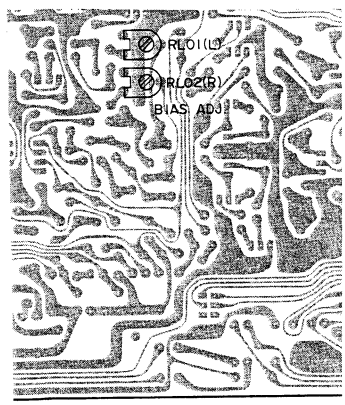
Proceed both for the right and left channels in the same manner.

PJ01



6.6 RECORDING BIAS CURRENT ADJUSTMENT

1. Set the TAPE SELECT switch to the NORM position.
2. Set up the deck to the recording state.
3. Adjust RL01(L) and RL02(R) for 3.2 mV reading (bias currents are 380 μA) at the test points TP1(L) and TP2(L GND), or TP3(R) and TP4(R GND).
4. Make sure that the following values are obtained in each position except NORM.
   SPECIAL/CrO_2 : 4.2 mV, METAL: 6.7 mV

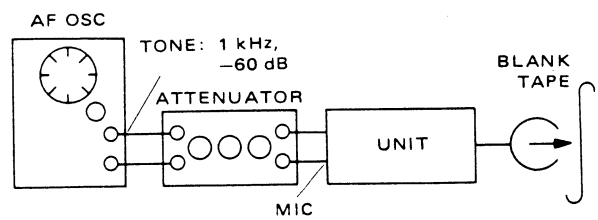


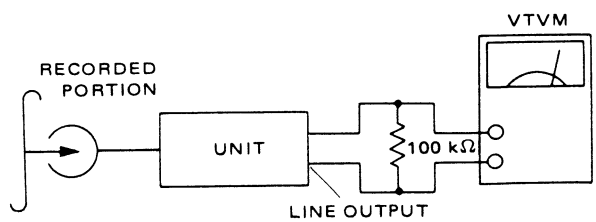
6.7 RECORD-PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

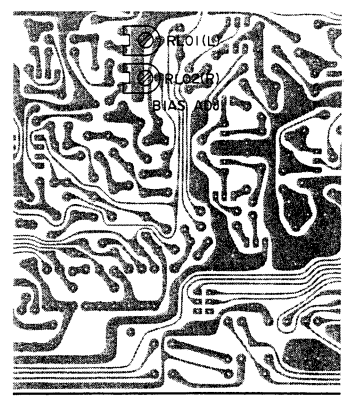
1. Set the TAPE SELECT switch to the NORM position.
2. Connect the 1 kHz, −60 dB input signal to the MIC jack. Set up the tape deck to the normal recording state. Adjust the REC LEVEL control for +10 dB LED PEAK LEVEL meter reading.
3. In turn, reduce the input level by 23 dB with the attenuator. Record the 1 kHz and 12.5 kHz signals.
4. Play each recorded signal back. Adjust the recording bias current with RL01(L) and RL02(R) until the response is within ±1 dB as reference to the 1 kHz, 0 dB response.

NOTES: 1. Proceed both for the right and left channels in the same manner.
2. If the recording bias current is reduced in the above adjustment, be sure to measure the distortion.

Mode: Record







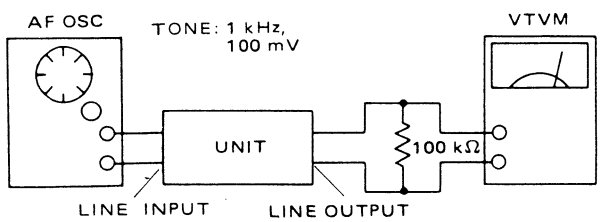
6.8 MPX FILTER ADJUSTMENT

1. Set the TAPE SELECT switch to the NORM position.
2. Connect the 1 kHz, 100 mV input signal to the LINE INPUT cord.
3. Set up the deck to the recording state.
4. Adjust the REC LEVEL control for 0 dB meter reading.
5. Adjust the line output level for 0 dB, and turn the DOLBY NR switch to the ON position.
6. Turn the input signal to the 19 kHz.
7. Adjust L601(L) and L602(R) for minimum output level.

NOTES:

1. **Proceed both for the right and left channels in the same manner.**
2. **If the filter characteristic is better than 30 dB, the MPX filter needs not to be adjusted.**

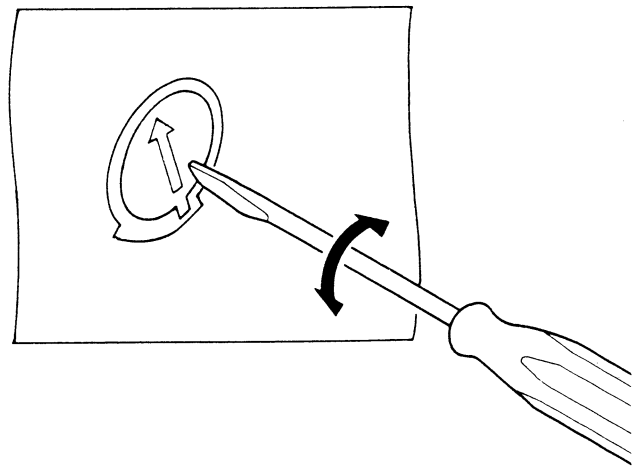
Mode: Record

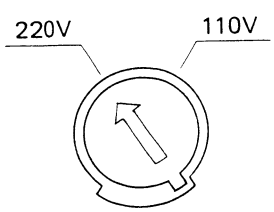


7. VOLTAGE CONVERSION

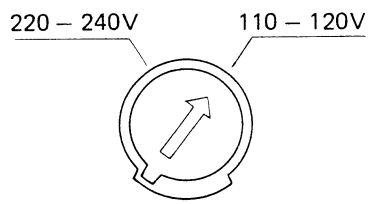
To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

CAUTION: DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE. DO NOT DISASSEMBLE THE VOLTAGE SELECTOR ABSOLUTELY.

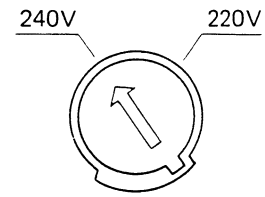




(N) VERSION



(P) VERSION

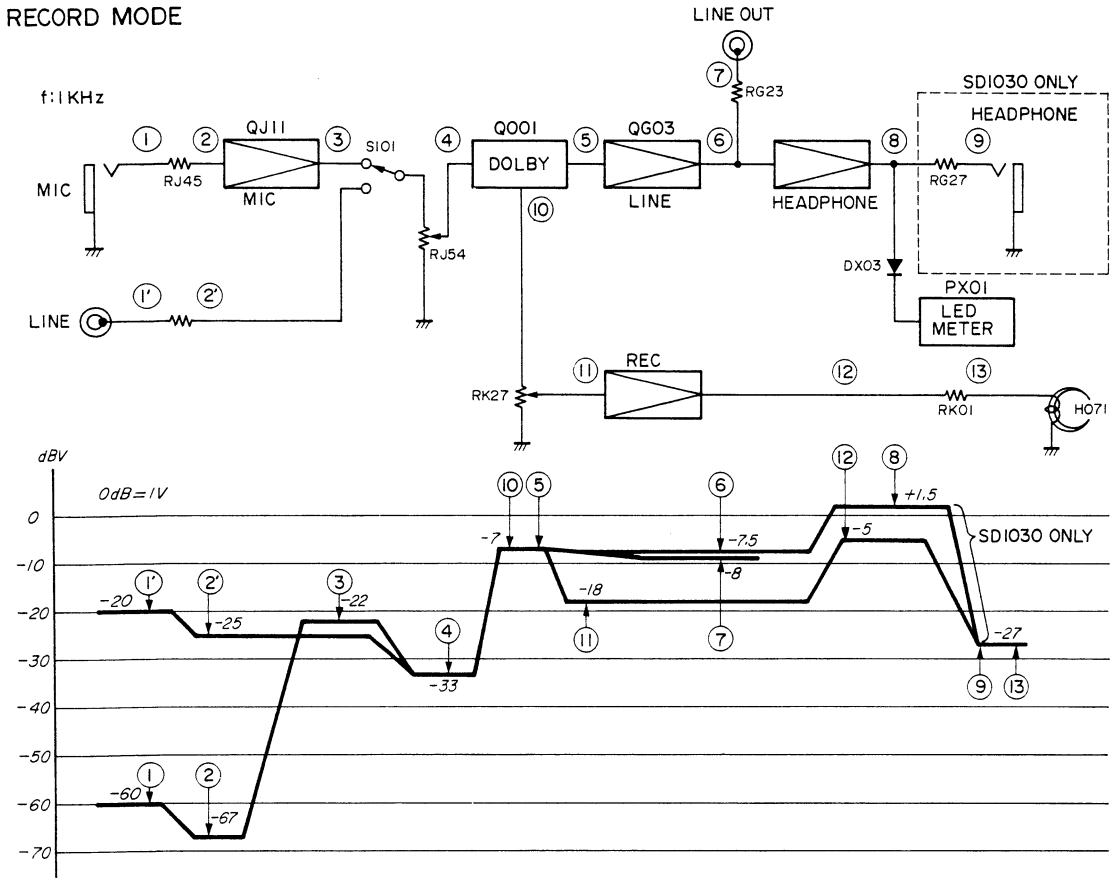


(A) VERSION

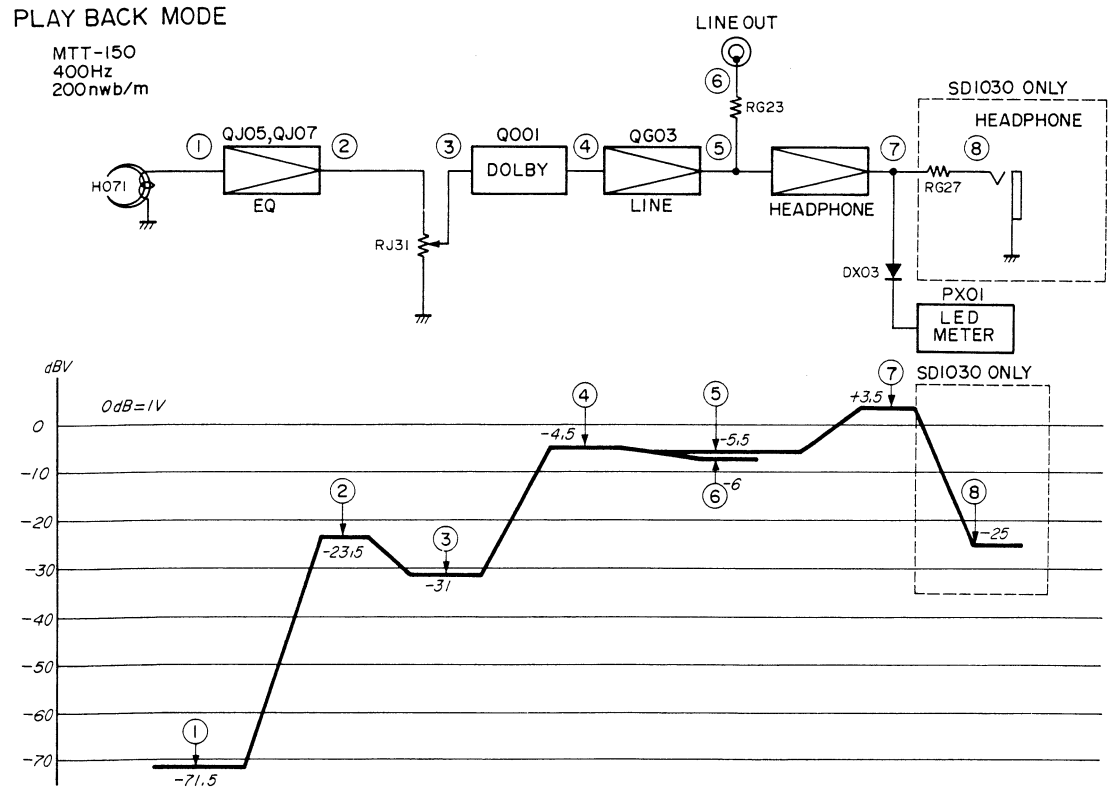
8. DIAGRAMS

8.1 LEVEL DIAGRAM

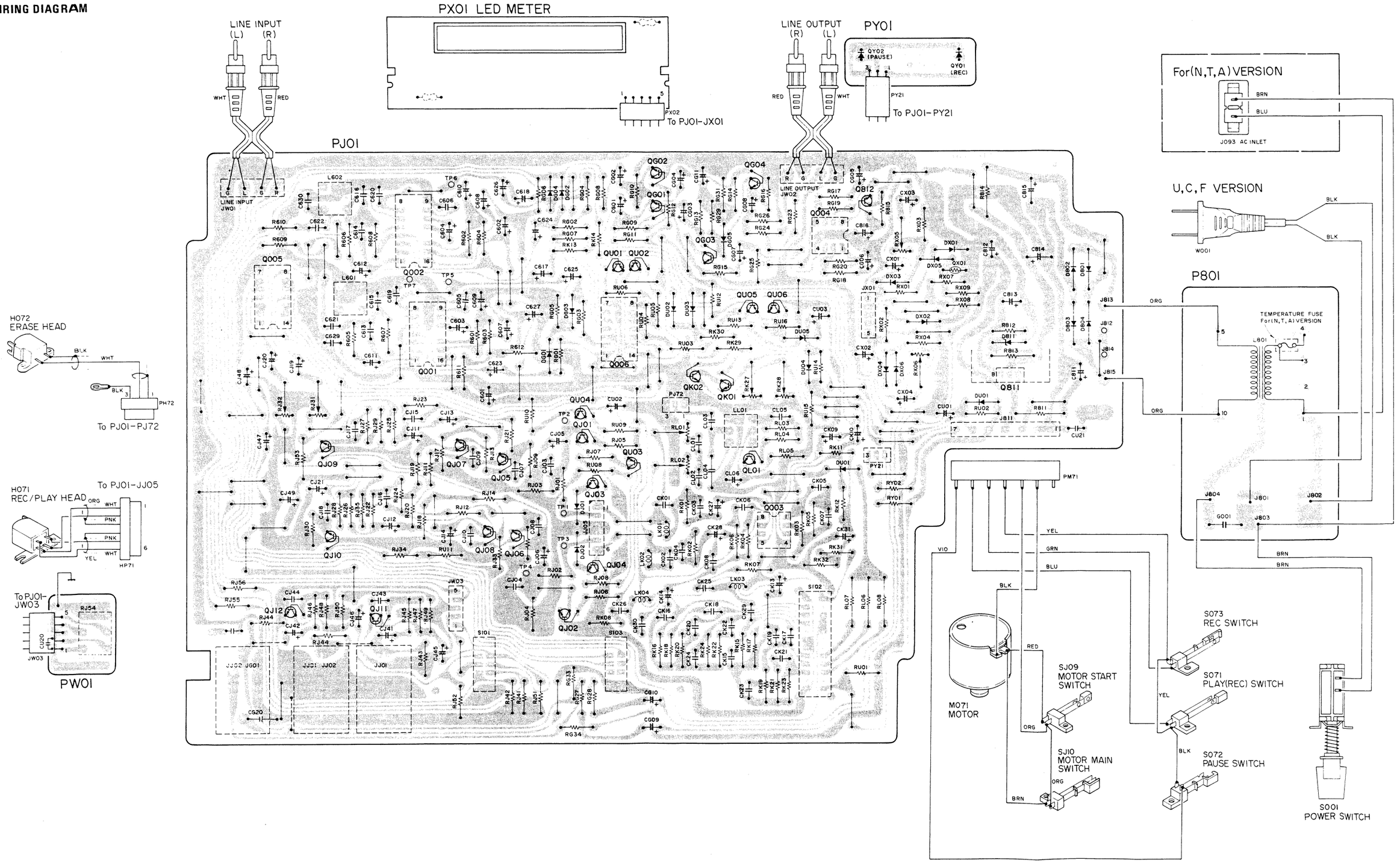
RECORD MODE



PLAY BACK MODE

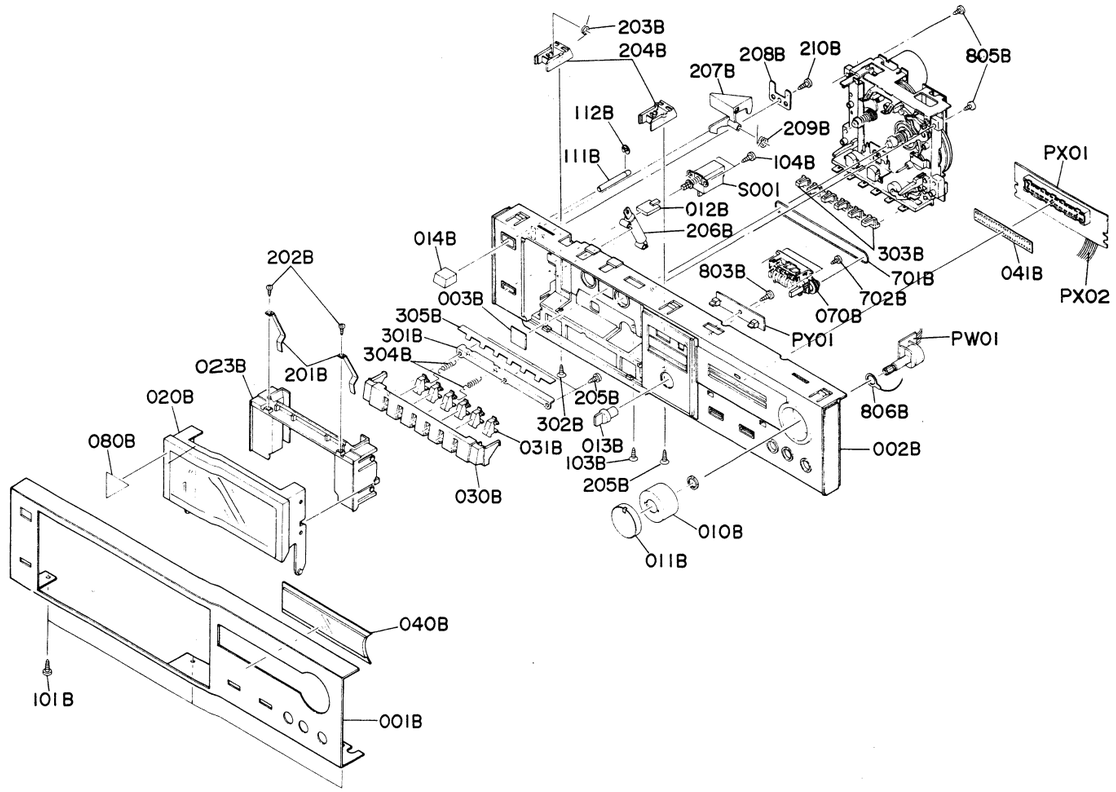


8.2 WIRING DIAGRAM



9. EXPLODED VIEWS AND PARTS LIST

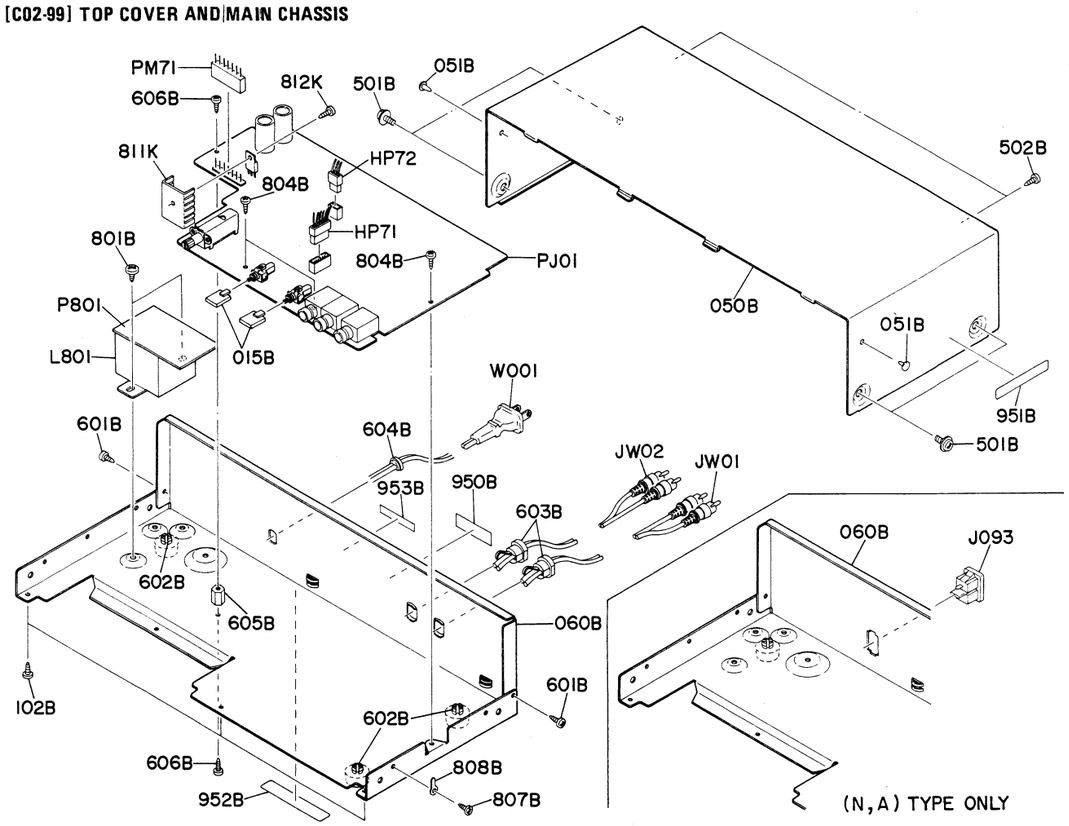
9.1 [C01-99] FRONT PANEL



REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
A	1	1	1	1	1	124T063400	Front Panel Assembly
001B	1	1	1	1	1	124T063010	Escutcheon, Front Panel
040B	1	1	1	1	1	124T158020	Window, L.E.D.
002B	1	1	1	1	1	124T063020	Escutcheon, Front Chassis
003B	1	1	1	1	1	4279274020	Reflector
010B	1	1	1	1	1	102T154070	Knob, Rec Level (R)
011B	1	1	1	1	1	102T154050	Knob, Rec Level (L)
012B	1	1	1	1	1	408H154010	Knob, Power Switch
013B	1	1	1	1	1	124T154010	Knob, Tape Select
014B	1	1	1	1	1	120T154020	Knob, Eject
020B	1	1	1	1	1	124T158500	Window, Cassette Door
023B	1	1	1	1	1	124T271010	Holder
030B	1	1	1	1	1	124T064010	Case, Button
031B	6	6	6	6	6	124T270010	Button
041B	1	1	1	1	1	124T303010	Mask, L.E.D.
070B	1	1	1	1	1	124T052010	Counter
080B		1				113T861010	Label
101B	3	3	3	3	3	51280308B0	B.H. Tapped Screw B3 x 8
103B	1	1	1	1	1	51500310B0	F.H. Taptite Screw F3 x 10
104B	2	2	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
111B	1	1	1	1	1	124T254010	Pin, Eject Knob
112B	1	1	1	1	1	64002500R0	RG Ring, E Type

REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
201B	2	2	2	2	2	124T115010	Spring, Cassette
202B	2	2	2	2	2	51302604U0	P.H.Taptite Screw P2.6 x 4
203B	1	1	1	1	1	124T115020	Spring, Door Open
204B	2	2	2	2	2	124T104020	Retainer
205B	2	2	2	2	2	51500310B0	F.H. Taptite Screw F3 x 10
206B	1	1	1	1	1	120T276010	Piston, Dumper
207B	1	1	1	1	1	124T002010	Arm, Door Lock
208B	1	1	1	1	1	124T104030	Retainer
209B	1	1	1	1	1	124T115030	Spring
210B	1	1	1	1	1	51280308B0	B.H. Tapped Screw B3 x 8
301B	1	1	1	1	1	124T104010	Retainer
302B	3	3	3	3	3	51282606B0	B.H. Tapped Screw B2.6 x 6
303B	6	6	6	6	6	124T118010	Spacer, Button Lever
304B	2	2	2	2	2	307Y115140	Spring
305B	1	1	1	1	1	124T107010	Sheet
701B	1	1	1	1	1	120T264010	Belt, Counter
702B	2	2	2	2	2	51282608B0	B.H. Tapped Screw B2.6 x 8
803B	1	1	1	1	1	51280308B0	B.H. Tapped Screw B3 x 8
805B	2	2	2	2	2	51280310B0	B.H. Tapped Screw B3 x 10
806B	1	1	1	1	1	62100019E0	Lug
⚠S001	1	1				SP01010520	Push Switch, Power
⚠S001			1	1		SP01010510	Push Switch, Power
⚠S001					1	SP01010530	Push Switch, Power
PX01	1	1	1	1	1	HI11203320	L.E.D. Meter
PX02	1	1	1	1	1	YU05260260	Jumper Lead, (5P)

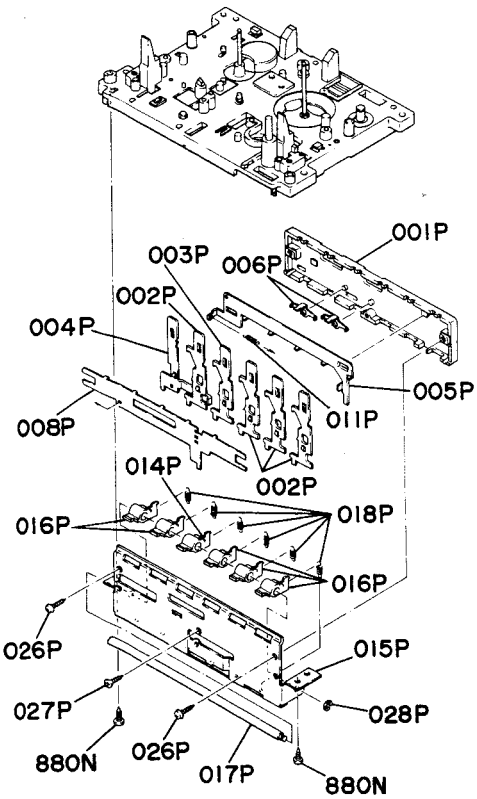
9.2 [C02-99] TOP COVER AND MAIN CHASSIS



REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
015B	2	2	2	2	2	226H154140	Knob, Dolby/Input
050B	1	1	1	1	1	124T257010	Lid, Top Corer,
051B	2	2	2	2	2	2991259110	Bushing
060B	1	1				124T105020	Chassis, Rear Panel
060B			1			124T105030	Chassis, Rear Panel
060B				1		124T105040	Chassis, Rear Panel
060B					1	124T105010	Chassis, Rear Panel
102B	3	3	3	3	3	51500310B0	F.H. Tappite Screw F3 x 10
501B	4	4				51260408Z0	B.T. Screw B4 x 8
501B			4	4	4	51260408U0	B.T. Screw B4 x 8
502B	2	2				51280308Z0	B.H. Tapped Screw B3 x 8
502B			2	2	2	51280308U0	B.H. Tapped Screw B3 x 8
601B	2	2	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
602B	3	3	3	3	3	001T057010	Leg
603B	2	2	2	2	2	1455259030	Bushing, Pin Cord
604B	1	1			1	1455259030	Bushing, AC Cord
605B	1	1	1	1	1	124T101010	Support
606B	2	2	2	2	2	51100305A9	B.H.M. Screw B3 x 5
801B	2	2	2	2	2	51280406B0	B.H. Tapped Screw B4 x 6
804B	3	3	3	3	3	51280308B0	B.H. Tapped Screw B3 x 8
807B	1	1	1	1	1	51280308B0	B.H. Tapped Screw B3 x 8
808B	1	1	1	1	1	62031650W0	Lug
950B	1	1	1	1	1	2112265010	Indicator
951B	1		1	1		2932861110	Label, Caution
952B	1		1	1		2578861010	Label, Caution
953B			1	1		4581861010	Label, Made in Japan

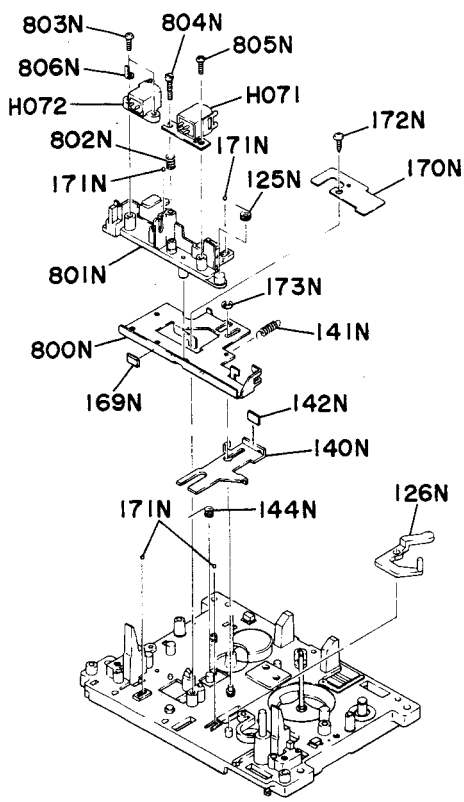
REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
⚠J093			1	1		YP04000580	Plug, AC Inlet
JW01	1	1				YB01001690	Connective Cord, Pin
JW01			1	1	1	YB01001680	Connective Cord, Pin
JW02	1	1				YB01001690	Connective Cord, Pin
JW02			1	1	1	YB01001680	Connective Cord, Pin
⚠L801	1	1				TS14820010	Power Transformer
⚠L801			1			TS14820020	Power Transformer
⚠L801				1		TS14820030	Power Transformer
⚠L801					1	TS14820040	Power Transformer
PM71	1	1	1	1	1	YJ06001060	Jack, (7P)
⚠W001	1	1				YC02000140	A.C. Power Cord
⚠W001					1	YC02400200	A.C. Power Cord
HP71	1	1	1	1	1	YB00400250	Connective Cord, (6P)
HP72	1	1	1	1	1	YB00400260	Connective Cord, (3P)

9.3 [P01-99] OPERATION LEVERS



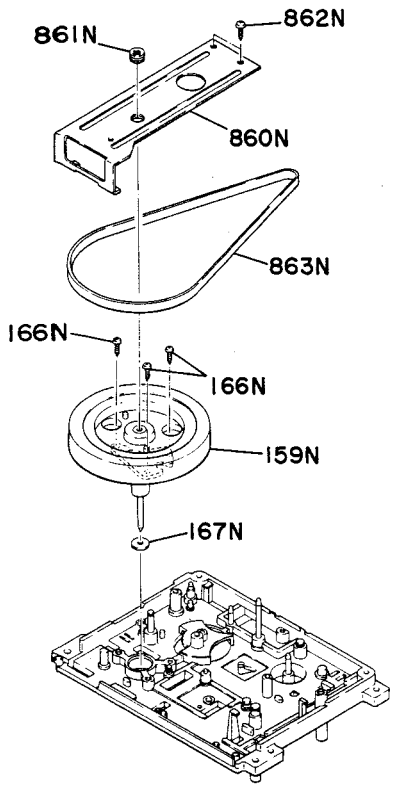
REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION	
001P	1	1	1	1	1	307Y051010	Guide	
002P	4	4	4	4	4	307Y354130	Lever	
003P	1	1	1	1	1	307Y354140	Lever, Play	
004P	1	1	1	1	1	307Y354150	Lever, Rec	
005P	1	1	1	1	1	307Y354110	Lever, Starter	
006P	2	2	2	2	2	307Y002120	Arm	
008P	1	1	1	1	1	307Y054020	Cam, Button Lock	
010P	1	1	1	1	1	307Y115140	Spring, Lock Cam	
014P	1	1	1	1	1	307Y002220	Arm, Play	
015P	1	1	1	1	1	307Y160020	Bracket	
016P	5	5	5	5	5	307Y002040	Arm	
017P	1	1	1	1	1	307Y112070	Shaft	
018P	6	6	6	6	6	307Y115120	Spring	
026P	2	2	2	2	2	51302608B0	P.H. Tapped Screw	P2.6 x 8
027P	1	1	1	1	1	5150260680	F.H. Tapped Screw	F2.6 x 6
028P	1	1	1	1	1	64002500R0	RG Ring, E Type	
880N	2	2	2	2	2	5130030880	P.H. Tapped Screw	P3 x 8

9.4 [P02-99] HEAD CHASSIS



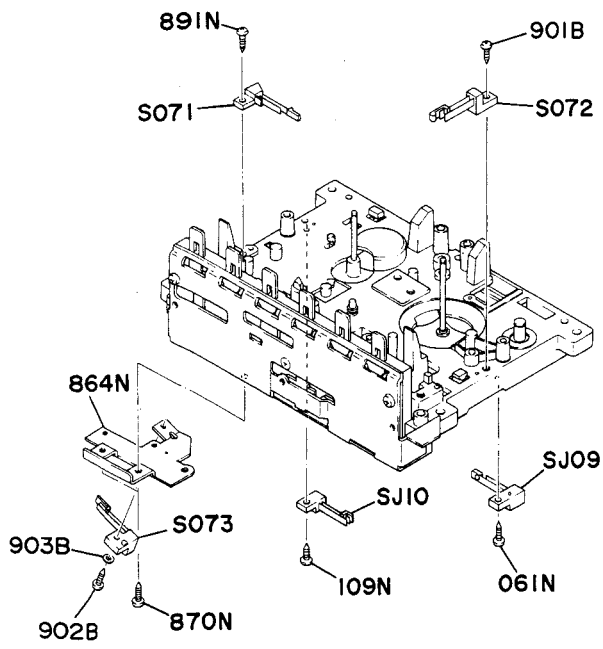
REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION	
125N	1	1	1	1	1	307Y115230	Spring	
126N	1	1	1	1	1	307Y002020	Arm, Take-up	
140N	1	1	1	1	1	307Y354090	Lever	
141N	1	1	1	1	1	307Y115110	Spring	
142N	1	1	1	1	1	307Y056020	Buffer	
144N	1	1	1	1	1	307Y115060	Spring	
169N	1	1	1	1	1	307Y056010	Buffer	
170N	1	1	1	1	1	307Y115030	Spring	
171N	4	4	4	4	4	61020010T0	Ball	
172N	1	1	1	1	1	5130260680	P.H. Tapped Screw	P2.6 x 6
173N	1	1	1	1	1	64001500R0	RG Ring, E Type	
800N	1	1	1	1	1	307Y105020	Chassis, Head	
801N	1	1	1	1	1	307Y160010	Bracket	
802N	1	1	1	1	1	4380115090	Spring, Azimuth	
803N	2	2	2	2	2	51100214A0	B.H.M. Screw	B2 x 14
804N	1	1	1	1	1	51190213A0	Screw	B2 x 13
805N	1	1	1	1	1	51100214A0	B.H.M. Screw	B2 x 14
806N	1	1	1	1	1	62021030W0	Lug	
H071	1	1	1	1	1	LH42851100	Rec/Play Head	
H072	1	1	1	1	1	LH31000560	Erase Head	

9.5 [P03-99] FLYWHEEL



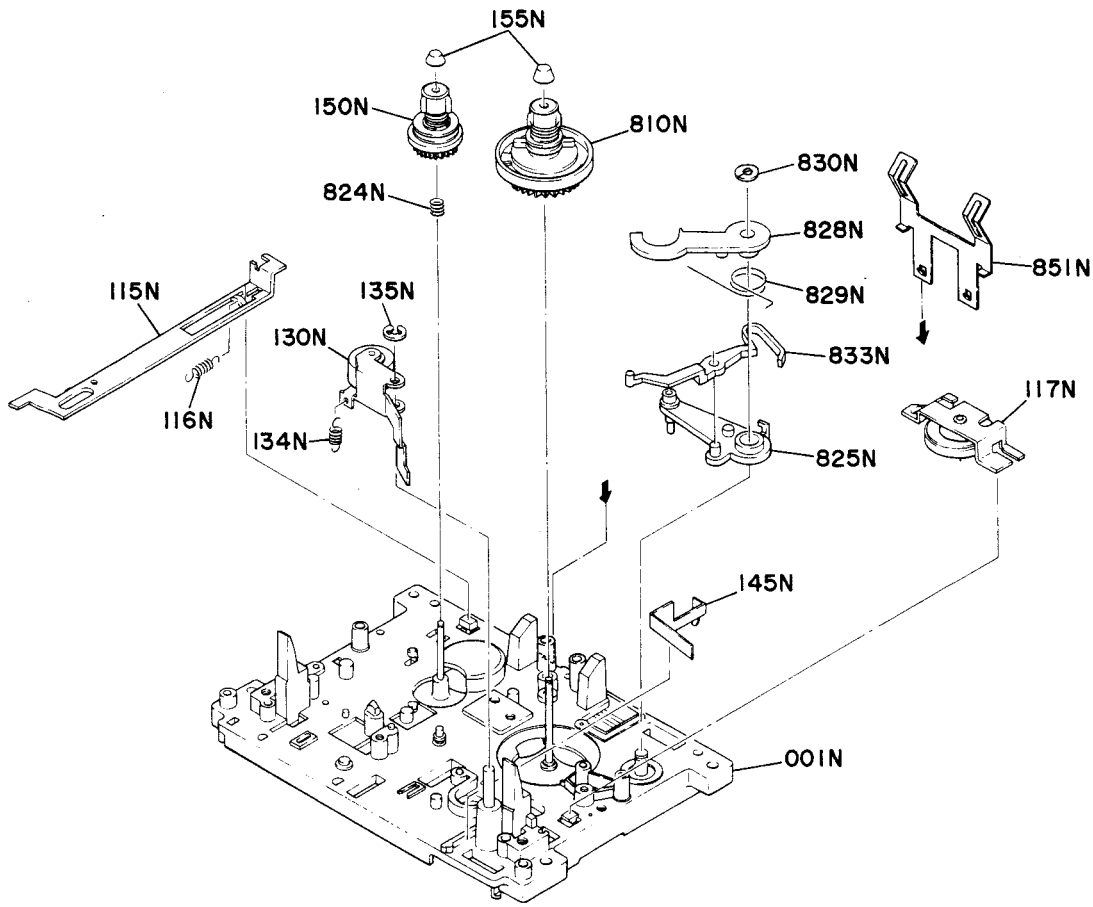
REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION	
159N	1	1	1	1	1	307Y273400	Flywheel Assembly	
166N	3	3	3	3	3	51302608B0	P.H. Tapped Screw	P2.6 x 8
167N	1	1	1	1	1	306Y118010	Spacer	
860N	1	1	1	1	1	307Y104010	Retainer	
861N	1	1	1	1	1	3483164010	Adjuster	
862N	2	2	2	2	2	51572604A0	P. Taptite Screw	P2.6 x 4
863N	1	1	1	1	1	4380264030	Belt, Motor	

9.6 [P04-99] SWITCH LOCATION



REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION	
901B	1	1	1	1	1	51382308P0	B.H.M. Screw	B2 x 5
902B	1	1	1	1	1	51100205A0	B.H.M. Screw	B2 x 5
903B	1	1	1	1	1	54020201E0	Flat Washer, P.	
061N	1	1	1	1	1	51060204A0	P.H.M. Screw	P2 x 4
109N	1	1	1	1	1	51302608B0	P.H. Tapped Screw	P2.6 x 8
864N	1	1	1	1	1	307Y160080	Bracket	
870N	2	2	2	2	2	51572604A0	P. Taptite Screw	P2.6 x 4
891N	1	1	1	1	1	51302608B0	P.H. Tapped Screw	P2.6 x 8
S071	1	1	1	1	1	SM01010680	Mini Switch, Muting	
S072	1	1	1	1	1	SM01010900	Mini Switch, Pause	
S073	1	1	1	1	1	SM01010910	Mini Switch, Rec	
SJ09	1	1	1	1	1	SM01010850	Mini Switch, Starter	
SJ10	1	1	1	1	1	SM01010870	Mini Switch, Motor	

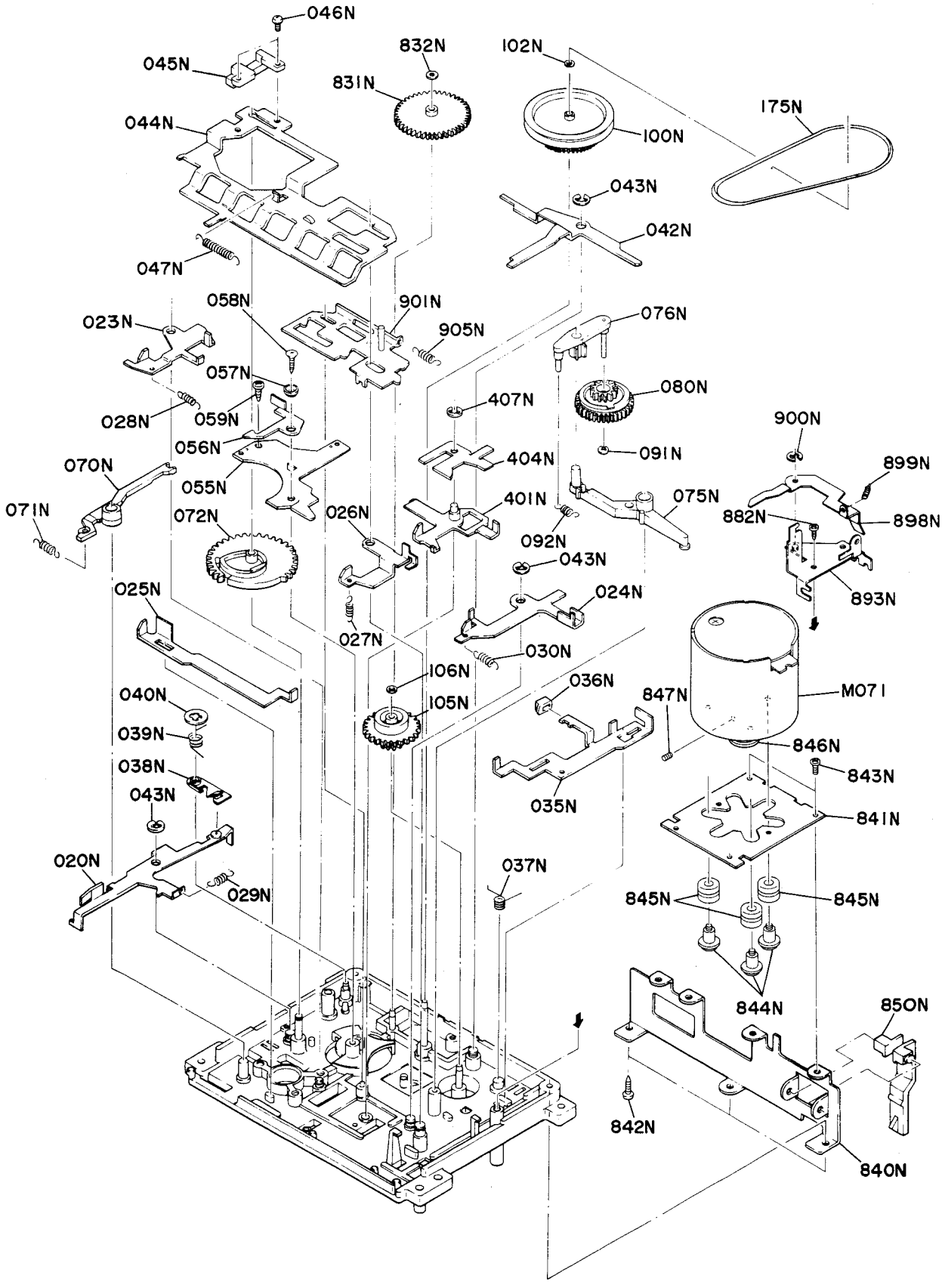
9.7 [P05-99] PARTS ASSEMBLED ON TOP OF CHASSIS



REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
001N	1	1	1	1	1	307Y105400	Chassis Assembly, Main
115N	1	1	1	1	1	307Y354080	Lever, Rec Safety
116N	1	1	1	1	1	307Y115140	Spring
117N	1	1	1	1	1	307Y354410	Lever Assembly, Take-up
130N	1	1	1	1	1	307Y002410	Arm Assembly, Pinch Roller
134N	1	1	1	1	1	307Y115100	Spring
135N	1	1	1	1	1	64002500R0	RG Ring, E Tyoe
145N	1	1	1	1	1	307Y115040	Spring
150N	1	1	1	1	1	307Y004400	Table Assembly, Supply
155N	2	2	2	2	2	4367067010	Cap

REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
810N	1	1	1	1	1	307Y004410	Table Assembly, Take-up
824N	1	1	1	1	1	307Y115250	Spring
825N	1	1	1	1	1	307Y002420	Arm Assembly, TMS
828N	1	1	1	1	1	307Y002060	Arm, TMS Senser
829N	1	1	1	1	1	307Y115070	Spring
830N	1	1	1	1	1	307Y114020	Stopper
833N	1	1	1	1	1	307Y002210	Arm, TMS
851N	1	1	1	1	1	307Y115020	Spring, Cassette

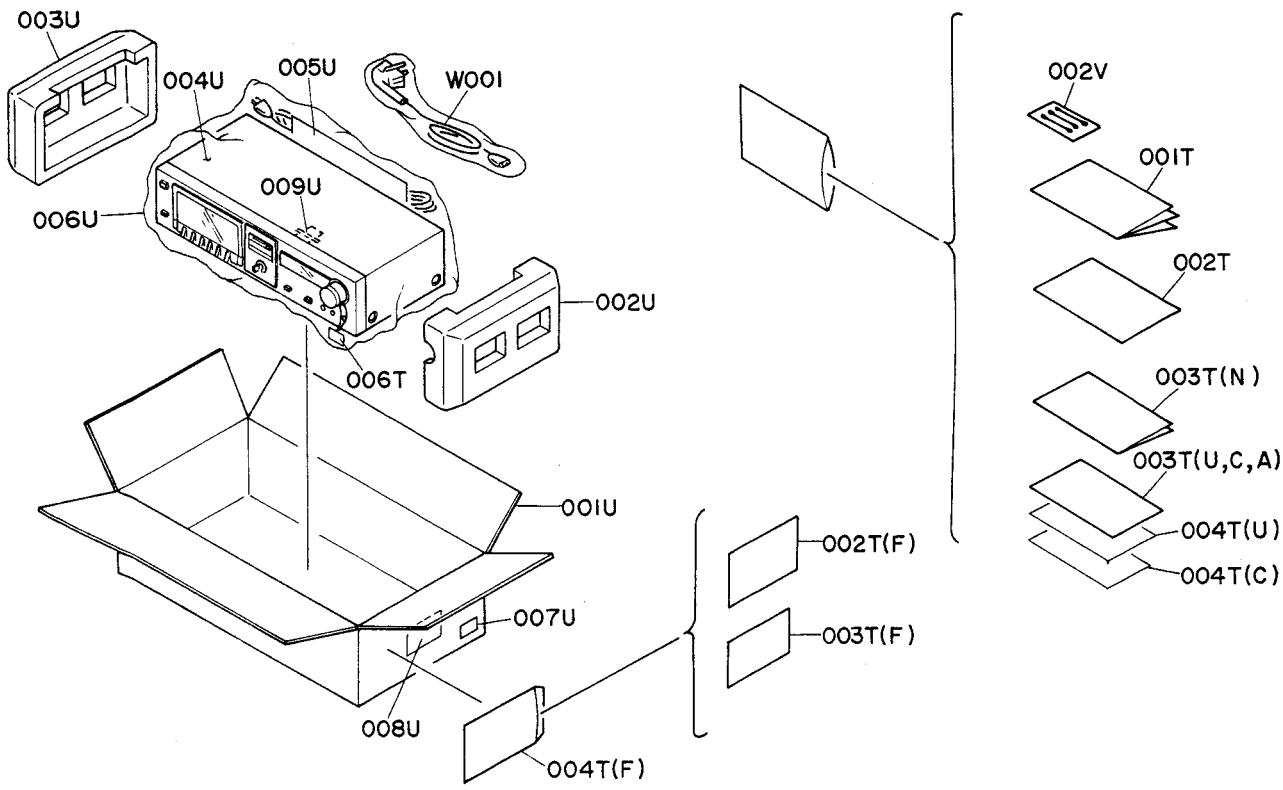
9.8 [P06-99] PARTS ASSEMBLED ON REVERSE OF CHASSIS



REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
020N	1	1	1	1	1	307Y354400	Lever Assembly, Pause
023N	1	1	1	1	1	307Y354020	Lever, FF
024N	1	1	1	1	1	307Y354030	Lever, REW
025N	1	1	1	1	1	307Y354050	Lever, Stop
026N	1	1	1	1	1	307Y354040	Lever, Rec
027N	1	1	1	1	1	307Y115210	Spring
028N	1	1	1	1	1	307Y115240	Spring
029N	1	1	1	1	1	307Y115240	Spring
030N	1	1	1	1	1	307Y115160	Spring
035N	1	1	1	1	1	307Y354070	Lever, Brake
036N	1	1	1	1	1	4367263010	Brake
037N	1	1	1	1	1	307Y115090	Spring
038N	1	1	1	1	1	307Y054040	Cam, Pause Lock
039N	1	1	1	1	1	307Y115080	Spring
040N	1	1	1	1	1	64020300Q0	RG Ring, CS Type
042N	1	1	1	1	1	307Y002100	Arm
043N	3	3	3	3	3	64000300R0	RG Ring, E Type
044N	1	1	1	1	1	307Y127010	Control Board
045N	1	1	1	1	1	307Y114010	Stopper
046N	2	2	2	2	2	51062604A0	P.H.M. Screw P2.6 x 4
047N	1	1	1	1	1	307Y115150	Spring
055N	1	1	1	1	1	307Y160030	Bracket, Starter SW.
056N	1	1	1	1	1	307Y002110	Arm
057N	1	1	1	1	1	307Y259010	Bushing
058N	1	1	1	1	1	51502610P0	F.H. Tapped Screw F2.6 x 10
059N	1	1	1	1	1	51302608B0	P.H.M. Screw P2.6 x 8
070N	1	1	1	1	1	307Y002030	Arm
071N	1	1	1	1	1	307Y115140	Spring
072N	1	1	1	1	1	307Y058050	Grar, Drive
075N	1	1	1	1	1	307Y002080	Arm, REW
076N	1	1	1	1	1	307Y002400	Arm Assembly, FF/REW
080N	1	1	1	1	1	307Y058700	Gear Assembly
091N	1	1	1	1	1	64001500R0	RG Ring, E Type
092N	1	1	1	1	1	307Y115200	Spring
100N	1	1	1	1	1	307Y262020	Pulley
102N	1	1	1	1	1	307Y118010	Spacer
105N	1	1	1	1	1	307Y058040	Gear, REW
106N	1	1	1	1	1	307Y118010	Spacer
175N	1	1	1	1	1	307Y264020	Belt
401N	1	1	1	1	1	307Y354420	Lever Assembly, Play
404N	1	1	1	1	1	307Y354100	Lever, Brake
407N	1	1	1	1	1	64002500R0	RG Ring, E Type
831N	1	1	1	1	1	307Y058060	Gear, TMS

REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
832N	1	1	1	1	1	307Y118010	Spacer
840N	1	1	1	1	1	307Y160040	Bracket
841N	1	1	1	1	1	307Y160050	Bracket, Motor
842N	3	3	3	3	3	51300308B0	P.H. Tapped Screw P3 x 8
843N	2	2	2	2	2	51572604A0	P. Taptite Screw P2.6 x 4
844N	3	3	3	3	3	4367112150	Shaft
845N	3	3	3	3	3	4383259010	Bushing
846N	1	1	1	1	1	307Y262050	Pulley, Motor
847N	1	1	1	1	1	51690305Q9	Socket Screw, HP M3 x 5
850N	1	1	1	1	1	307Y002090	Arm, Rec Safety
882N	1	1	1	1	1	51300308B0	P.H. Tapped Screw P3 x 8
893N	1	1	1	1	1	307Y104400	Retainer Assembly
898N	1	1	1	1	1	307Y002190	Arm
899N	1	1	1	1	1	307Y115140	Spring
900N	1	1	1	1	1	64002500R0	RG Ring, E Type
901N	1	1	1	1	1	307Y054400	Cam Assembly, Lock
905N	1	1	1	1	1	4367115120	Spring
M071	1	1	1	1	1	MM11200170	D.C. Motor, Governor 2200rpm

9.9 [H01-99] PACKING MATERIALS



REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
001T	1					124T851010	Instructions
001T		1	1	1		124T851310	Instructions
001T					1	124T851110	Instructions
002T	1					124T851020	Instructions, Spec
002T		1				124T851220	Instructions, Spec
002T			1	1		124T851320	Instructions, Spec
002T					1	9631000110	Guarantee Card
003T	1					2818854020	Guarantee Card
003T		1				2818854040	Guarantee Card
003T			1			124T856010	Circuit Diagram
003T				1		9631000090	Guarantee Card
003T					1	2976851040	Instruction, Spec
004T	1					2225813010	Envelope
004T		1				9650000050	S. Station Card
004T					1	2976813020	Envelope
005T					1	9650000030	S. Station Card
006T	1	1				9560000100	Hang Tag

REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
001U	1	1				124T801010	Packing Case
001U			1	1		124T801020	Packing Case
001U					1	124T801030	Packing Case
002U	1	1	1	1	1	124T809010	Cushion, (R)
003U	1	1	1	1	1	124T809020	Cushion, (L)
004U	1	1	1	1	1	2918107360	Sheet, Top Cover
005U	1	1	1	1	1	2918107390	Sheet, Rear Panel
006U	1	1	1	1	1	9090909030	Polyethylene Sheet
007U	2					9526019010	Serial No. Card
007U		4				9526019020	Serial No. Card
007U			4			9526019060	Serial No. Card
007U				4		9526019030	Serial No. Card
007U					4	9526019040	Serial No. Card
008U		2				9510901020	Label, Address
009U			1			2731821010	Silicagel
002V	1	1	1	1	1	4136071010	Cleaner
⚠W001			1			ZC01805010	A.C. Power Cord
⚠W001				1		ZC02006020	A.C. Power Cord

9.10 ELECTRICAL PARTS LIST

REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
							PJ01-MAIN CIRCUIT BOARD
PJ01	1	1	1	1	1	YK124T1410	P.W. Board, Main
	1	1	1	1		ZZ124T1410	P.W. Board Assembly
							PJ01-CAPACITORS
C601	1	1	1	1	1	EA47601630	Elect 47μF 16V
C602	1	1	1	1	1	EA47601630	Elect 47μF 16V
C603	1	1	1	1	1	EA10602530	Elect 10μF 25V
C604	1	1	1	1	1	EA10602530	Elect 10μF 25V
C605	1	1	1	1	1	DF15473350	Film 0.047μF ±5%
C606	1	1	1	1	1	DF15473350	Film 0.047μF ±5%
C607	1	1	1	1	1	EA33405030	Elect 0.33μF 50V
C608	1	1	1	1	1	EA33405030	Elect 0.33μF 50V
C609	1	1	1	1	1	EA10405030	Elect 0.1μF 50V
C610	1	1	1	1	1	EA10405030	Elect 0.1μF 50V
C611	1	1	1	1	1	EA10602530	Elect 10μF 25V
C612	1	1	1	1	1	EA10602530	Elect 10μF 25V
C613	1	1	1	1	1	DF15472300	Film 4700pF ±5%
C614	1	1	1	1	1	DF15472300	Film 4700pF ±5%
C615	1	1	1	1	1	DF15273350	Film 0.027μF ±5%
C616	1	1	1	1	1	DF15273350	Film 0.027μF ±5%
C617	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
C618	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
C619	1	1	1	1	1	DF15102300	Film 1000pF ±5%
C620	1	1	1	1	1	DF15102300	Film 1000pF ±5%
C621	1	1	1	1	1	DF15562300	Film 5600pF ±5%
C622	1	1	1	1	1	DF15562300	Film 5600pF ±5%
C623	1	1	1	1	1	EQ47503510	Elect 4.7μF 35V
C624	1	1	1	1	1	EQ47503510	Elect 4.7μF 35V
C625	1	1	1	1	1	EQ47503510	Elect 4.7μF 35V
C626	1	1	1	1	1	EQ47503510	Elect 4.7μF 35V
C627	1	1	1	1	1	EA22701030	Elect 220μF 10V
C629	1	1	1	1	1	DF15272300	Film 2700pF ±5%
C630	1	1	1	1	1	DF15272300	Film 2700pF ±5%
C811	1	1	1	1	1	EA47701630	Elect 470μF 16V
C812	1	1	1	1	1	EA47701630	Elect 470μF 16V
C813	1	1	1	1	1	EA22701630	Elect 220μF 16V
⚠C814	1	1	1	1	1	EA10803530	Elect 1000μF 35V
⚠C815	1	1	1	1	1	EA10803530	Elect 1000μF 35V
C816	1	1	1	1	1	EA22703530	Elect 220μF 35V
CG01	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CG02	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CG03	1	1	1	1	1	EA47405030	Elect 0.47μF 50V
CG04	1	1	1	1	1	EA47405030	Elect 0.47μF 50V
CG05	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CG06	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CG07	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CG08	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CG09	1	1	1	1	1	EA47601630	Elect 47μF 16V
CG10	1	1	1	1	1	EA47601630	Elect 47μF 16V
CG11	1	1	1	1	1	EA22601630	Elect 22μF 16V
CG20	1	1	1	1	1	DK18103300	Ceramic 0.01μF

REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
CJ03	1	1	1	1	1	DF55471090	Film 470pF ±5%
CJ04	1	1	1	1	1	DF55471090	Film 470pF ±5%
CJ05	1	1	1	1	1	EA22505030	Elect 2.2μF 50V
CJ06	1	1	1	1	1	EA22505030	Elect 2.2μF 50V
CJ07	1	1	1	1	1	DD15101370	Ceramic 100pF ±5%
CJ08	1	1	1	1	1	DD15101370	Ceramic 100pF ±5%
CJ09	1	1	1	1	1	DD15220370	Ceramic 22pF ±5%
CJ10	1	1	1	1	1	DD15220370	Ceramic 22pF ±5%
CJ11	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CJ12	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CJ13	1	1	1	1	1	EA47601630	Elect 47μF 16V
CJ14	1	1	1	1	1	EA47601630	Elect 47μF 16V
CJ15	1	1	1	1	1	DF15183350	Film 0.018μF ±5%
CJ16	1	1	1	1	1	DF15183350	Film 0.018μF ±5%
CJ17	1	1	1	1	1	DF15183350	Film 0.018μF ±5%
CJ18	1	1	1	1	1	DF15183350	Film 0.018μF ±5%
CJ19	1	1	1	1	1	EA22405030	Elect 0.22μF 50V
CJ20	1	1	1	1	1	EA22405030	Elect 0.22μF 50V
CJ21	1	1	1	1	1	EA47601630	Elect 47μF 16V
CJ41	1	1	1	1	1	EA10602530	Elect 10μF 25V
CJ42	1	1	1	1	1	EA10602530	Elect 10μF 25V
CJ43	1	1	1	1	1	DD15101370	Ceramic 100pF ±5%
CJ44	1	1	1	1	1	DD15101370	Ceramic 100pF ±5%
CJ45	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CJ46	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CJ47	1	1	1	1	1	EA22405030	Elect 0.22μF 50V
CJ48	1	1	1	1	1	EA22405030	Elect 0.22μF 50V
CJ49	1	1	1	1	1	EA22701630	Elect 220μF 16V
CK01	1	1	1	1	1	DD15181370	Ceramic 180pF ±5%
CK02	1	1	1	1	1	DD15181370	Ceramic 180pF ±5%
CK05	1	1	1	1	1	DF15683350	Film 0.068μF ±5%
CK06	1	1	1	1	1	DF15683350	Film 0.068μF ±5%
CK07	1	1	1	1	1	DD15220370	Ceramic 22pF ±5%
CK08	1	1	1	1	1	DD15220370	Ceramic 22pF ±5%
CK09	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CK10	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CK13	1	1	1	1	1	EA10602530	Elect 10μF 25V
CK14	1	1	1	1	1	EA10602530	Elect 10μF 25V
CK17	1	1	1	1	1	DF15103350	Film 0.01μF ±5%
CK18	1	1	1	1	1	DF15103350	Film 0.01μF ±5%
CK19	1	1	1	1	1	DF15332300	Film 3300pF ±5%
CK20	1	1	1	1	1	DF15332300	Film 3300pF ±5%
CK21	1	1	1	1	1	DF15682300	Film 6800pF ±5%
CK22	1	1	1	1	1	DF15682300	Film 6800pF ±5%
CK23	1	1	1	1	1	DF15332300	Film 3300pF ±5%
CK24	1	1	1	1	1	DF15332300	Film 3300pF ±5%
CK25	1	1	1	1	1	DF15682300	Film 6800pF ±5%
CK26	1	1	1	1	1	DF15682300	Film 6800pF ±5%
CK27	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CK28	1	1	1	1	1	EA47505030	Elect 4.7μF 50V
CK29	1	1	1	1	1	DF15152300	Film 1500pF ±5%
CK30	1	1	1	1	1	DF15152300	Film 1500pF ±5%
CK31	1	1	1	1	1	EA10701030	Elect 100μF 10V

REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
CL01	1	1	1	1	1	DD15221370	Ceramic 220pF ±5%
CL02	1	1	1	1	1	DD15221370	Ceramic 220pF ±5%
CL03	1	1	1	1	1	DF15104350	Film 0.1μF ±5%
CL04	1	1	1	1	1	DF75223510	Film 0.022μF ±5%
CL05	1	1	1	1	1	DF15103350	Film 0.01μF ±5%
CL06	1	1	1	1	1	EA22701630	Elect 220μF 16V
CU01	1	1	1	1	1	EA33505030	Elect 3.3μF 50V
CU02	1	1	1	1	1	EA10701630	Elect 100μF 16V
CU03	1	1	1	1	1	EA22701630	Elect 220μF 16V
CU21	1	1	1	1	1	DK18103300	Ceramic 0.01μF
CX01	1	1	1	1	1	EA10505030	Elect 1μF 50V
CX02	1	1	1	1	1	EA10505030	Elect 1μF 50V
CX03	1	1	1	1	1	EA10505030	Elect 1μF 50V
CX04	1	1	1	1	1	EA10505030	Elect 1μF 50V
							PJ01-RESISTORS
							(All Resistors are ±5% & ¼W)
R601	1	1	1	1	1	GD05274140	270KΩ
R602	1	1	1	1	1	GD05274140	270KΩ
R603	1	1	1	1	1	GD05184140	180KΩ
R604	1	1	1	1	1	GD05184140	180KΩ
R605	1	1	1	1	1	GD05473140	47KΩ
R606	1	1	1	1	1	GD05473140	47KΩ
R607	1	1	1	1	1	GD05332140	3.3KΩ
R608	1	1	1	1	1	GD05332140	3.3KΩ
R609	1	1	1	1	1	GD05181140	180Ω
R610	1	1	1	1	1	GD05181140	180Ω
R611	1	1	1	1	1	GD05102140	1KΩ
R612	1	1	1	1	1	GD05102140	1KΩ
R811	1	1	1		1	GA05100010	10Ω 1W
R811				1		GF05100120	10Ω ½W
⚠R812	1	1	1	1	1	GG05101140	100Ω
⚠R813	1	1	1	1	1	GG05471120	470Ω ½W
⚠R814	1	1	1	1	1	GA05010010	1Ω 1W
⚠R815	1	1	1	1	1	GD05682140	6.8KΩ
RG01	1	1	1	1	1	GD05682140	6.8KΩ
RG02	1	1	1	1	1	GD05682140	6.8KΩ
RG03	1	1	1	1	1	GD05682140	6.8KΩ
RG04	1	1	1	1	1	GD05682140	6.8KΩ
RG05	1	1	1	1	1	GD05123140	12KΩ
RG06	1	1	1	1	1	GD05123140	12KΩ
RG07	1	1	1	1	1	GD05153140	15KΩ
RG08	1	1	1	1	1	GD05153140	15KΩ
RG09	1	1	1	1	1	GD05474140	470KΩ
RG10	1	1	1	1	1	GD05474140	470KΩ
RG11	1	1	1	1	1	GD05472140	4.7KΩ
RG12	1	1	1	1	1	GD05472140	4.7KΩ
RG13	1	1	1	1	1	GD05274140	270KΩ
RG14	1	1	1	1	1	GD05274140	270KΩ
RG15	1	1	1	1	1	GD05682140	6.8KΩ
RG16	1	1	1	1	1	GD05682140	6.8KΩ
RG17	1	1	1	1	1	GD05153140	15KΩ
RG18	1	1	1	1	1	GD05153140	15KΩ
RG19	1	1	1	1	1	GD05273140	27KΩ
RG20	1	1	1	1	1	GD05273140	27KΩ

REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
RG23	1	1	1	1	1	GD05332140	3.3KΩ
RG24	1	1	1	1	1	GD05332140	3.3KΩ
RG25	1	1	1	1	1	GD05473140	47KΩ
RG26	1	1	1	1	1	GD05473140	47KΩ
RG27	1	1	1	1	1	GD05221140	220Ω
RG28	1	1	1	1	1	GD05221140	220Ω
RG29	1	1	1	1	1	GD05184140	180KΩ
RG31	1	1	1	1	1	GD05125140	1.2KΩ
RG33	1	1	1	1	1	GD05471140	470Ω
RG34	1	1	1	1	1	GD05471140	470Ω
RJ01	1	1	1	1	1	GD05100140	10Ω
RJ02	1	1	1	1	1	GD05100140	10Ω
RJ03	1	1	1	1	1	GD05104140	100KΩ
RJ04	1	1	1	1	1	GD05104140	100KΩ
RJ05	1	1	1	1	1	GD05103140	10KΩ
RJ06	1	1	1	1	1	GD05103140	10KΩ
RJ07	1	1	1	1	1	GD05272140	2.7KΩ
RJ08	1	1	1	1	1	GD05272140	2.7KΩ
RJ09	1	1	1	1	1	GD05820140	82Ω
RJ10	1	1	1	1	1	GD05820140	82Ω
RJ11	1	1	1	1	1	GD05473140	47KΩ
RJ12	1	1	1	1	1	GD05473140	47KΩ
RJ13	1	1	1	1	1	GD05394140	390KΩ
RJ14	1	1	1	1	1	GD05394140	390KΩ
RJ17	1	1	1	1	1	GD05102140	1KΩ
RJ18	1	1	1	1	1	GD05102140	1KΩ
RJ19	1	1	1	1	1	GD05682140	6.8KΩ
RJ20	1	1	1	1	1	GD05682140	6.8KΩ
RJ21	1	1	1	1	1	GD05682140	6.8KΩ
RJ22	1	1	1	1	1	GD05682140	6.8KΩ
RJ23	1	1	1	1	1	GD05184140	180KΩ
RJ24	1	1	1	1	1	GD05184140	180KΩ
RJ25	1	1	1	1	1	GD05332140	3.3KΩ
RJ26	1	1	1	1	1	GD05332140	3.3KΩ
RJ27	1	1	1	1	1	GD05332140	3.3KΩ
RJ28	1	1	1	1	1	GD05332140	3.3KΩ
RJ29	1	1	1	1	1	GD05224140	220KΩ
RJ30	1	1	1	1	1	GD05224140	220KΩ
RJ31	1	1	1	1	1	RA05030280	50KΩ, Trimming
RJ32	1	1	1	1	1	RA05030280	50KΩ, Trimming
RJ33	1	1	1	1	1	GD05153140	15KΩ
RJ34	1	1	1	1	1	GD05153140	15KΩ
RJ35	1	1	1	1	1	GD05333140	33KΩ
RJ43	1	1	1	1	1	GD05473140	47KΩ
RJ44	1	1	1	1	1	GD05473140	47KΩ
RJ45	1	1	1	1	1	GD05472140	4.7KΩ
RJ46	1	1	1	1	1	GD05472140	4.7KΩ
RJ47	1	1	1	1	1	GD05125140	1.2MΩ
RJ48	1	1	1	1	1	GD05125140	1.2MΩ
RJ49	1	1	1	1	1	GD05472140	4.7KΩ
RJ50	1	1	1	1	1	GD05472140	4.7KΩ
RJ51	1	1	1	1	1	GD05473140	47KΩ
RJ52	1	1	1	1	1	GD05473140	47KΩ
RJ53	1	1	1	1	1	GG05271120	270Ω ½W
RJ55	1	1	1	1	1	RD05333140	33KΩ
RJ56	1	1	1	1	1	RD05333140	33KΩ

REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
RK01	1	1	1	1	1	GD05123140	12KΩ
RK02	1	1	1	1	1	GD05123140	12KΩ
RK03	1	1	1	1	1	GD05683140	68KΩ
RK04	1	1	1	1	1	GD05683140	68KΩ
RK05	1	1	1	1	1	GD05183140	18KΩ
RK06	1	1	1	1	1	GD05183140	18KΩ
RK07	1	1	1	1	1	GD05181140	180Ω
RK08	1	1	1	1	1	GD05181140	180Ω
RK11	1	1	1	1	1	GD05563140	56KΩ
RK12	1	1	1	1	1	GD05563140	56KΩ
RK13	1	1	1	1	1	GD05123140	12KΩ
RK14	1	1	1	1	1	GD05123140	12KΩ
RK15	1	1	1	1	1	GD05562140	5.6KΩ
RK16	1	1	1	1	1	GD05562140	5.6KΩ
RK17	1	1	1	1	1	GD05153140	15KΩ
RK18	1	1	1	1	1	GD05153140	15KΩ
RK19	1	1	1	1	1	GD05472140	4.7KΩ
RK20	1	1	1	1	1	GD05472140	4.7KΩ
RK21	1	1	1	1	1	GD05682140	6.8KΩ
RK22	1	1	1	1	1	GD05682140	6.8KΩ
RK23	1	1	1	1	1	GD05332140	3.3KΩ
RK24	1	1	1	1	1	GD05332140	3.3KΩ
RK27	1	1	1	1	1	RA02030170	20KΩ, Trimming
RK28	1	1	1	1	1	RA02030170	20KΩ, Trimming
RK29	1	1	1	1	1	GD05183140	18KΩ
RK30	1	1	1	1	1	GD05183140	18KΩ
RK31	1	1	1	1	1	GD05472140	4.7KΩ
RK32	1	1	1	1	1	GD05472140	4.7KΩ
RL01	1	1	1	1	1	RA05030280	50KΩ, Trimming
RL02	1	1	1	1	1	RA05030280	50KΩ, Trimming
RL03	1	1	1	1	1	GD05273140	27KΩ
RL04	1	1	1	1	1	GD05681140	680Ω
⚠RL05	1	1	1		1	GG05100140	10Ω
⚠RL05				1		GF05100140	10Ω
⚠RL06	1	1	1	1	1	GA05151010	150Ω 1W
⚠RL07	1	1	1	1	1	GA05221010	220Ω 1W
⚠RL08	1	1	1			GA05100010	10Ω 1W
⚠RL08				1		GF05100120	10Ω ½W
⚠RL08					1	GG05100140	10Ω
RU01	1	1	1	1	1	GD05103140	10KΩ
RU02	1	1	1	1	1	GD05393140	39KΩ
RU03	1	1	1	1	1	GD05103140	10KΩ
RU04	1	1	1	1	1	GD05823140	82KΩ
RU05	1	1	1	1	1	GD05273140	27KΩ
RU06	1	1	1	1	1	GD05273140	27KΩ
RU08	1	1	1	1	1	GD05104140	100KΩ
RU09	1	1	1	1	1	GD05473140	47KΩ
RU10	1	1	1	1	1	GD05122140	1.2KΩ
RU11	1	1	1	1	1	GD05123140	12KΩ
RU12	1	1	1	1	1	GD05182140	1.8KΩ
RU13	1	1	1	1	1	GD05393140	39KΩ
RU14	1	1	1	1	1	GD05123140	12KΩ
RU15	1	1	1	1	1	GD05102140	1KΩ
RU16	1	1	1	1	1	GD05473140	47KΩ

REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
RX01	1	1	1	1	1	GD05473140	47KΩ
RX02	1	1	1	1	1	GD05473140	47KΩ
RX03	1	1	1	1	1	GD05273140	27KΩ
RX04	1	1	1	1	1	GD05273140	27KΩ
RX05	1	1	1	1	1	RA05030280	50KΩ, Trimming
RX06	1	1	1	1	1	RA05030280	50KΩ, Trimming
RX07	1	1	1	1	1	GD05322140	3.2KΩ
RX08	1	1	1	1	1	GD05682140	6.8KΩ
RX09	1	1	1	1	1	GD05822140	8.2KΩ
RY01	1	1	1	1	1	GD05102140	1KΩ
RY02	1	1	1	1	1	GD05102140	1KΩ
							PJ01-SEMICONDUCTORS
⚠D801	1	1	1	1	1	HD20015030	Diode DS135D
⚠D802	1	1	1	1	1	HD20015030	Diode DS135D
⚠D803	1	1	1	1	1	HD20015030	Diode DS135D
⚠D804	1	1	1	1	1	HD20015030	Diode DS135D
D811	1	1	1	1	1	HD30087090	Zener
DG01	1	1	1	1	1	HD20011050	Diode 1S1555
DG02	1	1	1	1	1	HD20011050	Diode 1S1555
DG03	1	1	1	1	1	HD20011050	Diode 1S1555
DG04	1	1	1	1	1	HD20011050	Diode 1S1555
DG05	1	1	1	1	1	HD20011050	Diode 1S1555
DJ01	1	1	1	1	1	HD20011050	Diode 1S1555
DJ02	1	1	1	1	1	HD20011050	Diode 1S1555
DL01	1	1	1	1	1	HD20011050	Diode 1S1555
DU01	1	1	1	1	1	HD20011050	Diode 1S1555
DU02	1	1	1	1	1	HD20011050	Diode 1S1555
DU03	1	1	1	1	1	HD20011050	Diode 1S1555
DU04	1	1	1	1	1	HD20011050	Diode 1S1555
DU05	1	1	1	1	1	HD30052090	Zener WZ-056
DX01	1	1	1	1	1	HD20011050	Diode 1S1555
DX02	1	1	1	1	1	HD20011050	Diode 1S1555
DX03	1	1	1	1	1	HD10004020	Diode OA91
DX04	1	1	1	1	1	HD10004020	Diode OA91
DX05	1	1	1	1	1	HD10004020	Diode OA91
DX06	1	1	1	1	1	HD10004020	Diode OA91
Q001	1	1	1	1	1	HC10010270	IC NE646BCC3727
Q002	1	1	1	1	1	HC10010270	IC NE646BCC3727
Q003	1	1	1	1	1	HC10003090	IC NJM4558D
Q004	1	1	1	1	1	HC10003090	IC NJM4558D
Q005	1	1	1	1	1	HC406600B0	IC 4066
Q006	1	1	1	1	1	HC406905B0	IC TC4069UBP
⚠Q811	1	1	1	1	1	HT403131E0	Transistor 2SD313(E)
Q812	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QG01	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QG02	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QG03	1	1	1	1	1	HT309451P0	Transistor 2SC945(P)
QG04	1	1	1	1	1	HT309451P0	Transistor 2SC945(P)

REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
QJ01	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QJ02	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QJ03	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QJ04	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QJ05	1	1	1	1	1	HT315701G0	Transistor 2SC1570(G)
QJ06	1	1	1	1	1	HT315701G0	Transistor 2SC1570(G)
QJ07	1	1	1	1	1	HT309451P0	Transistor 2SC945(P)
QJ08	1	1	1	1	1	HT309451P0	Transistor 2SC945(P)
QJ09	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QJ10	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QJ11	1	1	1	1	1	HT315701G0	Transistor 2SC1570(G)
QJ12	1	1	1	1	1	HT315701G0	Transistor 2SC1570(G)
QK01	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QK02	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QL01	1	1	1	1	1	HT313841R0	Transistor 2SC1384(R)
QU01	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QU02	1	1	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
QU03	1	1	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
QU04	1	1	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
QU05	1	1	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
QU06	1	1	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
QX01	1	1	1	1	1	HH00003030	Thermistor SDT-04
							PJ01-MISCELLANEOUS
J811	1	1	1	1	1	YP06001060	Plug, (7P)
JG01	1	1	1	1	1	YJ01001460	Jack, Head Phone
JJ01	1	1	1	1	1	YJ01001580	Jack, Mic (L)
JJ02	1	1	1	1	1	YJ01001580	Jack, Mic (R)
JJ05	1	1	1	1	1	YP06002420	Plug, (6P)
JX01	1	1	1	1	1	YJ06002390	Jack, (5P)
PJ72	1	1	1	1	1	YP06002360	Plug, (3P)
L601	1	1	1	1	1	LS10440020	M.P.X. Coil
L602	1	1	1	1	1	LS10440020	M.P.X. Coil
LK01	1	1	1	1	1	LC22260600	Choke Coil, 22mH
LK02	1	1	1	1	1	LC22260600	Choke Coil, 22mH
LK03	1	1	1	1	1	LC21060510	Choke Coil, 10mH
LK04	1	1	1	1	1	LC21060510	Choke Coil, 10mH
LL01	1	1	1	1	1	TC10440020	OSC Transformer
S101	1	1	1	1	1	SP02010630	Push Switch, Mic/Line
S102	1	1	1	1	1	SR04030320	Rotary Switch, Tape Select
S103	1	1	1	1	1	SP02010630	Push Switch, Dolby
							PW01-REC VOLUME CIRCUIT BOARD
PW01	1	1	1	1	1	YK124T1430	P.W. Board, Rec Volume
	1	1	1	1		ZZ124T1430	P.W. Board Assembly
CU20	1	1	1	1	1	DK18103300	Ceramic Cap. 0.01μF
RJ54	1	1	1	1	1	RD05030120	Variable Resistor 50KΩ
JW03	1	1	1	1	1	YU05180260	Jumper Lead, (5P)

REF. DESIG.	Q'TY U	C	N	A	F	PART NO.	DESCRIPTION
							PY01-MECHA L.E.D. CIRCUIT BOARD
PY01	1	1	1	1	1	YK124T1430	P.W. Board, Mecha L.E.D.
	1	1	1	1		ZZ124T1430	P.W. Board Assembly
QY01	1	1	1	1	1	HI10007320	L.E.D. GL-9RP9, Rec
QY02	1	1	1	1	1	HI10007320	L.E.D. GL-9RP9, Pause
PY21	1	1	1	1	1	YU03120260	Jumper Lead, (3P)
							P801-POWER SUPPLY CIRCUIT BOARD
P801	1	1	1	1	1	YK124T1440	P.W. Board, Power Supply
	1	1				ZZ124T1440	P.W. Board Assembly
			1			ZZ124T8440	P.W. Board Assembly
				1		ZZ124T9440	P.W. Board Assembly
⚠G001	1	1				DK18103530	Ceramic Cap. 0.01μF AC400V
⚠G001			1	1		DK18103840	Ceramic Cap. 0.01μF AC400V
⚠G001					1	DK18103850	Ceramic Cap. 0.01μF AC250V
J801	1	1			1	YL01010040	Terminal
J802	1	1			1	YL01010040	Terminal

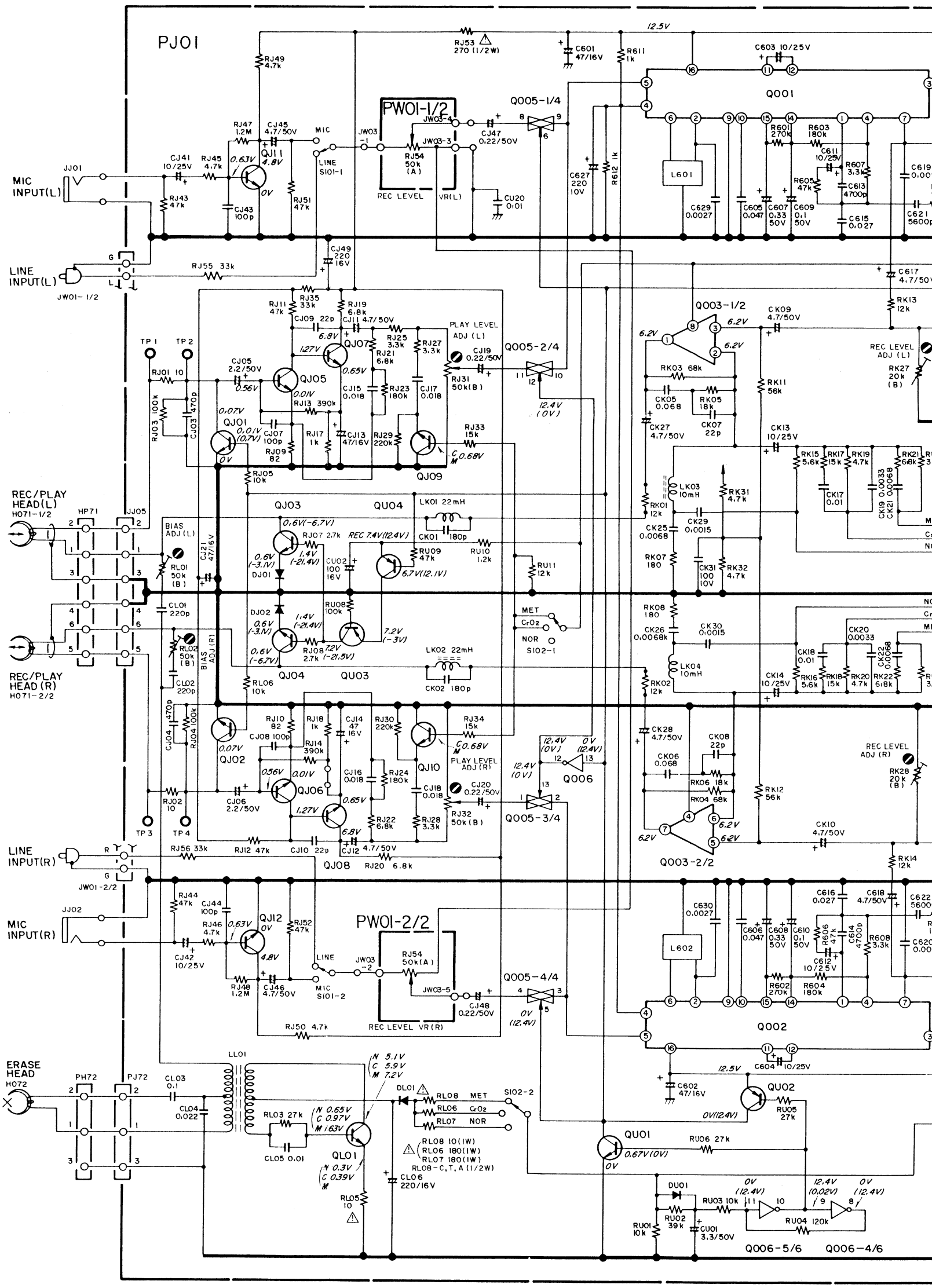
(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

10. TECNICAL SPECIFICATIONS

Style	Front load
Tape Drive System	Single Capstan Drive
Cartridge	Philips type compact cassette
Track System	Compatible Stereo 4-track 2-channel
Tape Speed	4.75 cm/sec.
Heads	2 Head System
Composition	Rec/Play: Super Hard Metal Alloy
	Erase: Dual gap Ferrite
Motor	1 Motor System
	Capstan DC Servo Motor
Meters	12 Dots Peak LED Meter x 2
Overall Frequency Response at -20 dB	
Normal Tape	30 Hz ~ 15 kHz
CrO_2 Tape	30 Hz ~ 16 kHz
Metal Tape	30 Hz ~ 17.5 kHz
Signal-to-Noise Ratio:	
Dolby (ON)	66 dB
Dolby (OFF)	56 dB
Wow and Flutter	
DIN WTD	0.13%
Outputs	
Line Level/Impedance	400 mV/5 kΩ
Headphone Level/Impedance	50 mV/220 Ω
Input (Level at 0 VU)	
Line Sensitivity/Impedance	50 mV/20 kΩ
Mic Sensitivity/Impedance	0.25 mV/10 kΩ
Fast Rewind Time	90 sec. (C-60)
Fast Forward Time	90 sec. (C-60)
AC Line Voltage	
N version	220V AC, 50 Hz
T version	240V AC, 50 Hz
Power Consumption	13 W
Dimensions (W x H x D)	416 x 100 x 194 mm
Weight	3.3 kg

Specifications and apperance are subject to change for modification without notice.

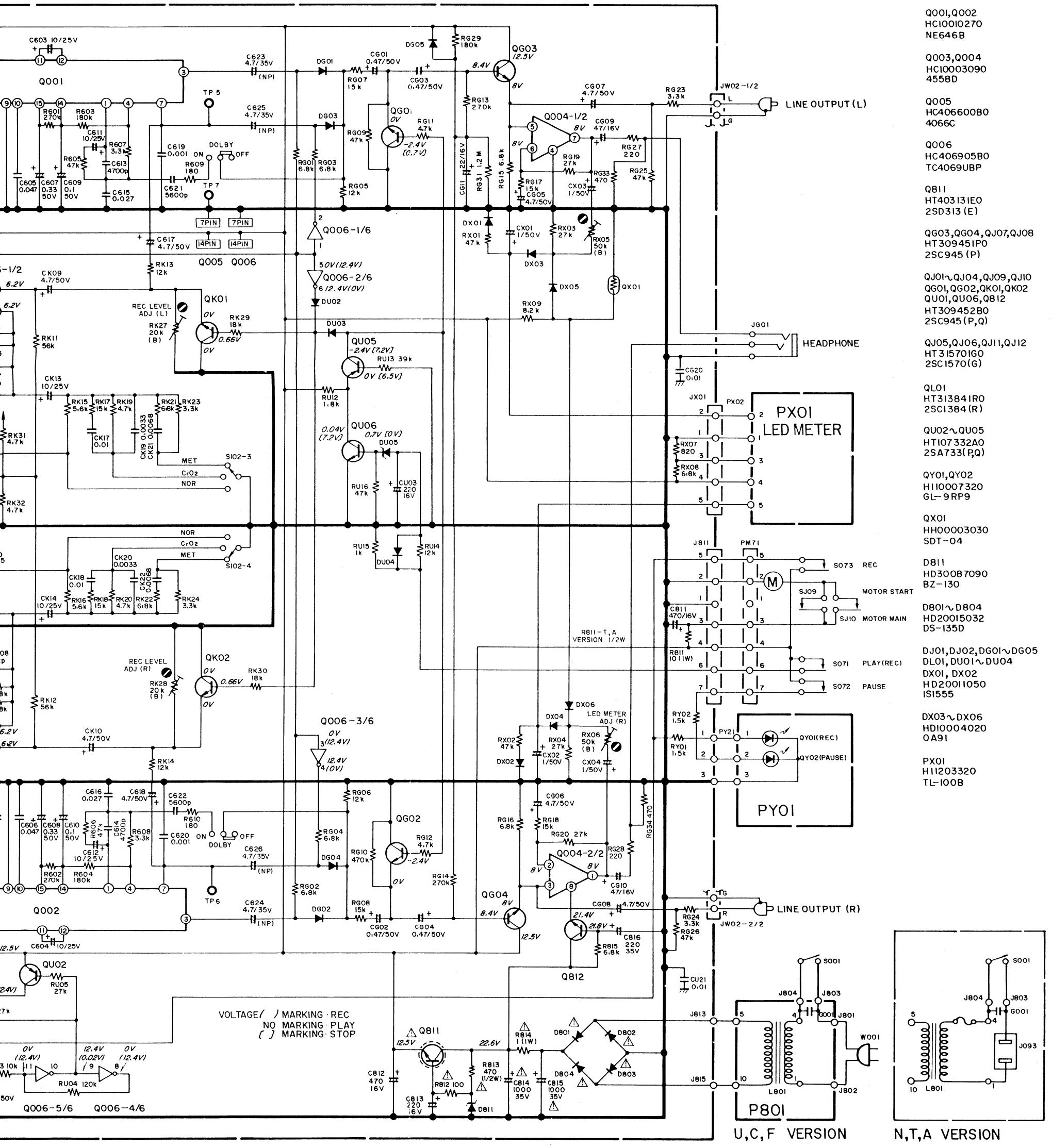
SCHEMATIC DIAGRAM



(Note on safety: The parts marked with ⚠ are important parts on the safety. Please use the parts having the designated parts number without fail.)

Components and wiring are subject to

SD1030



Q001,Q002
HC10010270
NE646B

Q003,Q004
HC10003090
4558D

Q005
HC406600B0
4066C

Q006
HC406905B0
TC4069UBP

Q811
HT403131E0
2SD313(E)

QG03,QG04,QJ07,QJ08
HT309451P0
2SC945(P)

QJ01~QJ04,QJ09,QJ10
QG01,QG02,QK01,QK02
QU01,QU06,Q812
HT309452B0
2SC945(P,Q)

QJ05,QJ06,QJ11,QJ12
HT315701G0
2SC1570(G)

QL01
HT313841R0
2SC1384(R)

QU02~QU05
HT107332A0
2SA733(P,Q)

QY01,QY02
H110007320
GL-9RP9

QX01
HH00003030
SDT-04

D811
HD30087090
BZ-130

D801~D804
HD20015032
DS-135D

DJ01,DJ02,DG01~DG05
DL01,DU01~DU04
DX01,DX02
HD20011050
1SI555

DX03~DX06
HD10004020
0A91

PX01
H11203320
TL-100B

Components and wiring are subject to change for modification without notice.